# Appendix B

Ryan Hagerty/USFWS

*Boy observing a monarch butterfly*

# Findings of Appropriateness and Compatibility Determinations

This appendix reflects our evaluation of what uses to allow or not allow under the Service-preferred alternative B of the draft comprehensive conservation plan (CCP) and environmental assessment (EA). Table B.1 lists other uses for which the refuge does not have existing completed findings of appropriateness (FOAs) and compatibility determinations (CDs) and indicates our proposal for those uses under alternative B. Following this table, we provide the full FOAs and CDs for all of these uses under alternative B.

**Table B.1. Uses Addressed in James River NWR CCP under Alternative B (Service-preferred Alternative).**

| Use | Not Appropriate | Compatible | Comments | Page |
|---|---|---|---|---|
| Camping | X | | | B-2 |
| Collecting Natural Products | X | | | B-4 |
| Firing Range | X | | | B-7 |
| Horseback Riding | X | | | B-10 |
| Pets on the Refuge | X | | | B-12 |
| Swimming and Sunbathing | X | | | B-14 |
| Use of Pursuit Dogs for Hunting | X | | | B-16 |
| Commercial Forest Management for Habitat Management | | X | Completed FOA to accompany updated CD. Use is found appropriate and compatible with stipulations. | B-18 |
| Hunting | | X | FOA not required. Updated former CD titled "Big Game Hunting" to describe existing deer hunting opportunities. New CD finds uses compatible with stipulations. | B-28 |
| Research by Non-Service Personnel | | X | Completed FOA to accompany updated CD. Use is found appropriate and compatible with stipulations. | B-40 |
| Wildlife Observation, Photography, Environmental Education, and Interpretation | | X | FOA not required. Expanded former CD titled "Outdoor Classroom (Teachers and Students)" to include wildlife observation, photography, environmental education, and interpretation. New CD finds uses compatible with stipulations. | B-57 |

**FINDING OF APPROPRIATENESS OF A REFUGE USE**

Refuge Name: James River National Wildlife Refuge

Use: Camping

This form is not required for wildlife-dependent recreational uses, 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? | ✓ | |
| (b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)? | ✓ | |
| (c) Is the use consistent with applicable Executive orders and Department and Service policies? | ✓ | |
| (d) Is the use consistent with public safety? | ✓ | |
| (e) Is the use consistent with goals and objectives in an approved management plan or other document? | | ✓ |
| (f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed? | ✓ | |
| (g) Is the use manageable within available budget and staff? | | ✓ |
| (h) Will this be manageable in the future within existing resources? | | ✓ |
| (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? | | ✓ |
| (j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future? | | ✓ |

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 ___ 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**_____

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.**

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## JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE

**Refuge Name:** James River National Wildlife Refuge

**Use:** Camping

**NARRATIVE:**

In accordance with the 2006 U.S. Fish and Wildlife Service Appropriate Use Policy (603 FW 1), the refuge manager must first determine if the use is appropriate prior to allowing any non-priority public use on the refuge. Camping is not identified as a priority public use of the National Wildlife Refuge System (Refuge System) under the Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the Refuge System Improvement Act of 1997 (Public Law 105-57). This use is considered a general public use that is not a wildlife-dependent recreational use (as defined in the Improvement Act) and does not contribute to fulfillment of refuge purposes, goals, or objectives as described in current refuge management plans. In accordance with the Appropriate Use Policy (603 FW 1), general public uses are the lowest priorities for refuge managers to consider. Camping has been found to be not an appropriate public use of James River National Wildlife Refuge (NWR) for the following reasons.

Allowing camping would not support any of the goals and objectives for James River NWR, as outlined in the CCP for the refuge. These goals and objectives emphasize conserving habitats and wildlife species of conservation concern. This use is not consistent with any approved refuge management plan.

Resources needed to manage an overnight, primitive camping program that adequately provides for public and employee sanitation and safety, without disturbing or harming wildlife species, would divert existing and future resources from accomplishing priority refuge tasks. Primitive “backcountry” camping on the refuge presents unacceptable levels of risk from the potential escape of campfires to wildfires and the possible disturbance to sensitive habitats, migratory birds, and other wildlife species, and could present conflicts with other refuge users. Camping cannot be accommodated at the refuge without impairing existing wildlife-dependent recreational uses or the potential to provide quality compatible, wildlife-dependent recreation.

For these reasons, we have determined that camping is not an appropriate public use for the refuge.

**FINDING OF APPROPRIATENESS OF A REFUGE USE**

Refuge Name: James River National Wildlife Refuge

Use: Collecting Natural Products

This form is not required for wildlife-dependent recreational uses, 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? | ✓ | |
| (b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)? | ✓ | |
| (c) Is the use consistent with applicable Executive orders and Department and Service policies? | ✓ | |
| (d) Is the use consistent with public safety? | ✓ | |
| (e) Is the use consistent with goals and objectives in an approved management plan or other document? | | ✓ |
| (f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed? | ✓ | |
| (g) Is the use manageable within available budget and staff? | | ✓ |
| (h) Will this be manageable in the future within existing resources? | | ✓ |
| (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? | ✓ | |
| (j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future? | ✓ | |

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 ___ 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**_____

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.**

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## JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE

**Refuge Name:** James River National Wildlife Refuge

**Use:** Collecting Natural Products

**NARRATIVE:**

In accordance with the 2006 U.S. Fish and Wildlife Service Appropriate Use Policy (603 FW 1), the refuge manager must first determine if the use is appropriate prior to allowing any non-priority public use on the refuge. The collection of natural products for personal use or consumption includes living and non-living materials such as firewood, berries, mushrooms, native vegetation, deer antler sheds, amphibians, reptiles. Collecting natural products is not identified as a priority public use of the National Wildlife Refuge System (Refuge System) under the Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the Refuge System Improvement Act of 1997 (Public Law 105-57). This use is considered a general public use that is not a wildlife-dependent recreational use (as defined in the Improvement Act) and does not contribute to fulfillment of refuge purposes, goals, or objectives as described in current refuge management plans. In accordance with the Appropriate Use Policy (603 FW 1), general public uses are the lowest priorities for refuge managers to consider. Collecting natural products has been found to be not an appropriate public use of James River National Wildlife Refuge (NWR) for the following reasons.

The collecting of natural products is prohibited on refuge lands by Title 50 of the Code of Federal Regulations, except by special use permit (50 CFR 27.51).

The Service policy on Appropriate Refuge Uses (603 FW 1) states that: "General public uses that are not wildlife-dependent recreational uses (as defined by the Improvement Act) and do not contribute to the fulfillment of refuge purposes or goals or objectives as described in current refuge management plans are the lowest priorities for refuge managers to consider. These uses are likely to divert refuge management resources from priority general public uses or away from our responsibilities to protect and manage fish, wildlife, and plants, and their habitats. Therefore, both law and policy have a general presumption against allowing such uses within the Refuge System."

Allowing collection of natural products would not support any of the goals and objectives for James River NWR, as outlined in the comprehensive conservation plan (CCP) for the refuge. These goals and objectives emphasize conserving habitats and wildlife species of conservation concern. Allowing visitors to collect natural materials may lead to negative impacts to eagles, other wildlife species, and the habitats they rely upon. Negative impacts may include trampling of vegetation and wildlife disturbance. Visitors walking off established public use trails may impact plants by compacting soils, increasing erosion, and walking on young plants thereby reducing their survival and regeneration (Trails and Wildlife Task Force 1998). Berries, native plants, and shed antlers can be important sources of food for various wildlife species, and the removal of these can have adverse effects on native wildlife. This use is not consistent with any approved refuge management plan.

Allowing the collection of natural products would divert existing and future resources from accomplishing priority tasks. It also presents unacceptable levels of risk from the potential negative impacts on sensitive habitats, migratory birds, and other wildlife species, and could present conflicts with other refuge users.

For these reasons, we have determined that collecting natural products is not an appropriate public use for the refuge.

**LITERATURE CITED:**

Trails and Wildlife Task Force. 1998. Planning Trails with Wildlife in Mind: A Handbook for Trail Planners.

Colorado State Parks, Denver, Colorado. 51 pp. Accessed June 2012 at:
*http://www.fs.fed.us/outdoors/naturewatch/start/planning/Trails-for-Wildlife-Handbk.pdf.*

**FINDING OF APPROPRIATENESS OF A REFUGE USE**

Refuge Name: James River National Wildlife Refuge

Use: Firing Range

This form is not required for wildlife-dependent recreational uses, 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? | ✓ | |
| (b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)? | ✓ | |
| (c) Is the use consistent with applicable Executive orders and Department and Service policies? | | ✓ |
| (d) Is the use consistent with public safety? | ✓ | |
| (e) Is the use consistent with goals and objectives in an approved management plan or other document? | | ✓ |
| (f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed? | ✓ | |
| (g) Is the use manageable within available budget and staff? | | ✓ |
| (h) Will this be manageable in the future within existing resources? | | ✓ |
| (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? | | ✓ |
| (j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1 6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future? | | ✓ |

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 ___ 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**_____

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.**

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## JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE

**Refuge Name:** James River National Wildlife Refuge

**Use:** Firing Range

**NARRATIVE:**

In accordance with the 2006 U.S. Fish and Wildlife Service (Service) Appropriate Use Policy (603 FW 1), the refuge manager must first determine if the use is appropriate prior to allowing any non-priority public use on the refuge. The use of a firing range is not identified as a priority public use of the National Wildlife Refuge System (Refuge System) under the Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the Refuge System Improvement Act of 1997 (Public Law 105-57). This use is considered a general public use that is not a wildlife-dependent recreational use (as defined in the Improvement Act) and would not contribute to fulfillment of refuge purposes, goals, or objectives as described in current refuge management plans. In accordance with the Appropriate Use Policy (603 FW 1), general public uses are the lowest priorities for refuge managers to consider. The use of a firing range has been found to be not an appropriate public use of James River National Wildlife Refuge (NWR) for the following reasons.

The primary reason for this determination is derived from Service policy on Appropriate Refuge Uses (603 FW 1). The policy states that: "General public uses that are not wildlife-dependent recreational uses (as defined by the Improvement Act) and do not contribute to the fulfillment of refuge purposes or goals or objectives as described in current refuge management plans are the lowest priorities for refuge managers to consider. These uses are likely to divert refuge management resources from priority general public uses or away from our responsibilities to protect and manage fish, wildlife, and plants, and their habitats. Therefore, both law and policy have a general presumption against allowing such uses within the Refuge System."

Allowing the use of a firing range would not support any of the goals and objectives for James River NWR, as outlined in the comprehensive conservation plan (CCP) for the refuge. These goals and objectives emphasize conserving habitats and wildlife species of conservation concern, particularly bald eagles. This use is not consistent with any approved refuge management plan.

The use of a firing range is not consistent with Service policy on secondary uses and would divert existing and future resources from accomplishing priority tasks. It also presents unacceptable levels of risk from the potential negative impacts on sensitive habitats, migratory birds, and other wildlife species, and could present conflicts with other refuge users.

Allowing the use of a firing range on the refuge could negatively impact sensitive habitats, migratory birds, and other wildlife species. Contaminants identified at skeet and trap shooting ranges and rifle and pistol firing ranges have been identified as the cause of mortality and health impacts to birds and mammals (Bennett et al. 2007, Lewis et al. 2001, Vyas et al. 2000). Contaminants have also been found to bioaccumulate in earthworms and vegetation and to be transported in surface waters draining from shooting ranges (Bennett et al. 2007, Craig et al. 1999).

Grubb and King (1991) analyzed a variety of human activities, including gunshots, and the response of bald eagles to those activities. The study found that human activities that are distant, of short duration, out of sight, few in number, below, and quiet have the least impact. The operation of a firing range that is within 1,000 feet of bald eagle breeding and nesting activity, operates for hours each day, is in open sight, allows repetitive firing during operation, and is classified as noisy would cause eagles to take flight and potentially leave the area. In a separate study, gunshots were found to be the only noises that elicited overt escape behavior in eagles (Stalmaster and Newman 1978).

Similarly, other wildlife species have been shown to modify their behavioral patterns as a result of noise impacts. Many animals depend on acoustic signals to find their young, mate, and locate prey; therefore, noise interference with these signals can endanger the individual organism or cause temporary or permanent habitat abandonment (Bender 1977).

The use of a firing range on the refuge may also conflict with public use goals and objectives because the displacement of wildlife by activity and noise from the range could materially interfere with wildlife observation, a priority public use of the refuge. The close proximity of the proposed trail and public use infrastructure to the firing range location would impact wildlife-dependent recreational visitors seeking a tranquil and serene opportunity to observe wildlife and connect with nature. The natural soundscape of James River NWR is an important natural feature that contributes to the visitor's experience at the refuge. The natural sounds of the refuge change seasonally with vegetation changes and migration, but include the rustling and crunching of leaves, the snapping of twigs, the barking of squirrels, and the drumming of woodpeckers. The calls of a wide variety of birds and frogs add a harmony of pitches and melodies, wind whistles through the forests, and waves may lap gently against the shore or crash into the sandy beach with a dull roar. The natural soundscape of James River NWR is serene and calm, explaining to the listening visitor great detail about the surrounding ecosystem and wildlife. The operation of a firing range would materially detract from the visitor experience at James River NWR.

For these reasons, we have determined that the use of a firing range is not an appropriate use of James River NWR.

**LITERATURE CITED:**

Bennett, J.R., C.A. Kaufman, I. Koch, J. Sova, and K.J. Reimer. 2007. Ecological risk assessment of lead contamination at rifle and pistol ranges using techniques to account for site characteristics. Science of the Total Environment 374(1): 91-101. Accessed May 2014 at: *http://www.sciencedirect.com/science/article/pii/S0048969706009983*.

Bender, A. 1977. Noise Impact on Wildlife: An Environmental Impact Assessment. *In* NASA. Goddard Space Flight Center Ninth Conference on Space Simulation. Silver Spring, Maryland. Pgs. 155-165.

Craig A., L. Hare, and A. Tessier. 1999. Experimental evidence for cadmium uptake via calcium channels in the aquatic insect *Chironomus staegeri*. Aquatic Toxicology 44(4): 225-262. Accessed May 2014 at: *http://www.sciencedirect.com/science/article/pii/S0166445X98000861*.

Grubb, T.G. and R.M. King. 1991. Assessing human disturbance of breeding bald eagles with classification tree models. The Journal of Wildlife Management 55(3): 500-511. Accessed May 2014 at: *http://www.jstor.org/stable/3808982*.

Lewis, L.A., R.J. Poppenga, W.R. Davidson, J.R. Fischer, and K.A. Morgan. 2001. Lead toxicosis and trace element levels in wild birds and mammals at a firearms training facility. Archives of Environmental Contamination and Toxicology 41: 208-214. Accessed May 2014 at: *http://www.ncbi.nlm.nih.gov/pubmed/11462145*.

Stalmaster, M.V. and J.R. Newman. 1978. Behavioral responses of wintering bald eagles to human activity. The Journal of Wildlife Management 42(3): 506-513. Accessed May 2014 at: *http://www.jstor.org/stable/3800811*.

Vyas, N.B., J.W. Spann, G.H. Heinz, W.N. Beyer, J.A. Jaquette, and J.M. Mengelkoch. 2000. Lead poisoning of passerines at a trap and skeet range. Environmental Pollution 107: 159–166. Accessed May 2014 at: *http://www.sciencedirect.com/science/article/pii/S0269749199001128*.

**FINDING OF APPROPRIATENESS OF A REFUGE USE**

Refuge Name: James River National Wildlife Refuge

Use: Horseback Riding

This form is not required for wildlife-dependent recreational uses, 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? | ✓ | |
| (b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)? | ✓ | |
| (c) Is the use consistent with applicable Executive orders and Department and Service policies? | ✓ | |
| (d) Is the use consistent with public safety? | ✓ | |
| (e) Is the use consistent with goals and objectives in an approved management plan or other document? | | ✓ |
| (f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed? | ✓ | |
| (g) Is the use manageable within available budget and staff? | | ✓ |
| (h) Will this be manageable in the future within existing resources? | | ✓ |
| (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? | | ✓ |
| (j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future? | | ✓ |

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 ___ 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**_____

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.**

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**02/06**

## JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE

**Refuge Name:** James River National Wildlife Refuge

**Use:** Horseback Riding

**NARRATIVE:**

In accordance with the 2006 U.S. Fish and Wildlife Service (Service) Appropriate Use Policy (603 FW 1), the refuge manager must first determine if the use is appropriate prior to allowing any non-priority public use on the refuge. The use of horseback riding is not identified as a priority public use of the National Wildlife Refuge System (Refuge System) under the Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the Refuge System Improvement Act of 1997 (Public Law 105-57). This use is considered a general public use that is not a wildlife-dependent recreational use (as defined in the Improvement Act) and would not contribute to fulfillment of refuge purposes, goals, or objectives as described in current refuge management plans. In accordance with the Appropriate Use Policy (603 FW 1), general public uses are the lowest priorities for refuge managers to consider. Horseback riding has been found to be not an appropriate public use of James River National Wildlife Refuge (NWR) for the following reasons.

Allowing horseback riding would not support any of the goals and objectives for James River NWR, as outlined in the comprehensive conservation plan (CCP) for the refuge. These goals and objectives emphasize conserving habitats and wildlife species of conservation concern. Allowing horseback riding on the refuge could negatively impact sensitive resources, migratory birds, and other wildlife species. This use is not consistent with any approved refuge management plan.

Resources needed to manage a horseback riding program that adequately provides for public and employee sanitation and safety, without disturbing wildlife species, would divert existing and future resources from accomplishing priority refuge tasks. It also presents unacceptable levels of risk from the potential spread of invasive species from horse droppings and could present conflicts with other refuge users. The refuge does not have parking space to support horse trailers in our designated parking areas. Refuge roads and trails are unable to safely accommodate horseback riding in addition to the existing vehicular and pedestrian wildlife-dependent recreational uses.

Horseback riding does not contribute to visitor understanding or appreciation of refuge resources and would not benefit natural or cultural resources within the refuge.

For these reasons, we have determined that horseback riding is not an appropriate public use for the refuge.

**FINDING OF APPROPRIATENESS OF A REFUGE USE**

Refuge Name: James River National Wildlife Refuge

Use: Pets on the Refuge

This form is not required for wildlife-dependent recreational uses, 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? | ✓ | |
| (b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)? | ✓ | |
| (c) Is the use consistent with applicable Executive orders and Department and Service policies? | ✓ | |
| (d) Is the use consistent with public safety? | ✓ | |
| (e) Is the use consistent with goals and objectives in an approved management plan or other document? | | ✓ |
| (f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed? | ✓ | |
| (g) Is the use manageable within available budget and staff? | | ✓ |
| (h) Will this be manageable in the future within existing resources? | | ✓ |
| (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? | | ✓ |
| (j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future? | | ✓ |

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 ___ 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**_____

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.**

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## JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE

**Refuge Name:** James River National Wildlife Refuge

**Use:** Pets on the Refuge

### NARRATIVE:

In accordance with the 2006 U.S. Fish and Wildlife Service (Service) Appropriate Use Policy (603 FW 1), the refuge manager must first determine if the use is appropriate prior to allowing any non-priority public use on the refuge. Allowing pets on the refuge is not identified as a priority public use of the National Wildlife Refuge System (Refuge System) under the Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the Refuge System Improvement Act of 1997 (Public Law 105-57). This use is considered a general public use that is not a wildlife-dependent recreational use (as defined in the Improvement Act) and does not contribute to fulfillment of refuge purposes, goals, or objectives as described in current refuge management plans. In accordance with the Appropriate Use Policy (603 FW 1), general public uses are the lowest priorities for refuge managers to consider. Pets on the refuge have been found to be not an appropriate public use of James River National Wildlife Refuge (NWR) for the following reasons.

Allowing pets on the refuge does not support the biological goals and objectives for James River NWR, as defined in the comprehensive conservation plan (CCP) for the refuge. These goals and objectives emphasize conserving habitats and species of conservation concern. This use is not consistent with any approved refuge management plan.

Allowing pets, particularly dogs and cats, on the refuge is a concern for refuge management. Within the Eastern Virginia Rivers NWR Complex, pet owners are known to have allowed their animals to run free on our refuges, which then materially interferes with existing wildlife-dependent recreational uses on the refuge. Free-roaming dogs have accosted refuge visitors and disrupted wildlife observation. Free-roaming domestic cats are estimated to kill approximately 1.4 to 3.7 billion birds and 6.9 to 20.7 billion mammals in the United States on an annual basis. Thirty-one percent of the bird mortality and 11 percent of the mammal mortality is estimated to be caused by owned cats. As such, free-roaming domestic cats on the refuge may have a significant impact on the mortality of refuge wildlife (Loss et al. 2013).

For these reasons, we have determined that allowing pets on the refuge is not an appropriate public use for the refuge.

### LITERATURE CITED:

Loss, S.R., T. Will, and P.P. Marra. 2013. The impact of free-ranging domestic cats on wildlife of the United States. Nature Communications 4. Accessed May 2014 at: *http://dx.doi.org/10.1038/ncomms2380*.

**FINDING OF APPROPRIATENESS OF A REFUGE USE**

Refuge Name: James River National Wildlife Refuge

Use: Swimming and Sunbathing

This form is not required for wildlife-dependent recreational uses, 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? | ✓ | |
| (b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)? | ✓ | |
| (c) Is the use consistent with applicable Executive orders and Department and Service policies? | ✓ | |
| (d) Is the use consistent with public safety? | ✓ | |
| (e) Is the use consistent with goals and objectives in an approved management plan or other document? | | ✓ |
| (f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed? | ✓ | |
| (g) Is the use manageable within available budget and staff? | | ✓ |
| (h) Will this be manageable in the future within existing resources? | | ✓ |
| (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? | | ✓ |
| (j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future? | | ✓ |

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 ___ 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**_____

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.**

**FWS Form 3-2319**
**02/06**

## JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE

**Refuge Name:** James River National Wildlife Refuge

**Use:** Swimming and Sunbathing

**NARRATIVE:**

In accordance with the 2006 U.S. Fish and Wildlife Service (Service) Appropriate Use Policy (603 FW 1), the refuge manager must first determine if the use is appropriate prior to allowing any non-priority public use on the refuge. Swimming and sunbathing are not identified as priority public uses of the National Wildlife Refuge System (Refuge System) under the Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the Refuge System Improvement Act of 1997 (Public Law 105-57). This use is considered a general public use that is not a wildlife-dependent recreational use (as defined in the Improvement Act) and would not contribute to fulfillment of refuge purposes, goals, or objectives as described in current refuge management plans. In accordance with the Appropriate Use Policy (603 FW 1), general public uses are the lowest priorities for refuge managers to consider. Swimming and sunbathing have been found to be not appropriate public uses of James River National Wildlife Refuge (NWR) for the following reasons.

Allowing swimming and sunbathing would not support any of the goals and objectives for James River NWR, as outlined in the comprehensive conservation plan (CCP) for the refuge. These goals and objectives emphasize conserving habitats and wildlife species of conservation concern. This use is not consistent with any approved refuge management plan.

Resources needed to manage swimming and sunbathing that adequately provides for public and employee sanitation and safety, without disturbing or harming wildlife species, would divert existing and future resources from accomplishing priority refuge tasks. It also presents unacceptable levels of risk from the potential negative impacts on sensitive habitats, migratory birds, and other wildlife species, and could present conflicts with other refuge users.

For these reasons, we have determined that swimming and sunbathing are not an appropriate uses of James River NWR.

**FINDING OF APPROPRIATENESS OF A REFUGE USE**

Refuge Name: James River National Wildlife Refuge

Use: Use of Pursuit Dogs for Hunting

This form is not required for wildlife-dependent recreational uses, 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? | ✓ | |
| (b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)? | ✓ | |
| (c) Is the use consistent with applicable Executive orders and Department and Service policies? | ✓ | |
| (d) Is the use consistent with public safety? | | ✓ |
| (e) Is the use consistent with goals and objectives in an approved management plan or other document? | | ✓ |
| (f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed? | ✓ | |
| (g) Is the use manageable within available budget and staff? | | ✓ |
| (h) Will this be manageable in the future within existing resources? | | ✓ |
| (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? | | ✓ |
| (j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future? | | ✓ |

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 ✓ 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**_____

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.**

**FWS Form 3-2319**
**02/06**

## JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE

**Refuge Name:** James River National Wildlife Refuge

**Use:** Use of Pursuit Dogs for Hunting

**NARRATIVE:**

In accordance with the 2006 U.S. Fish and Wildlife Service (Service) Appropriate Use Policy (603 FW 1), the refuge manager must first determine if the use is appropriate prior to allowing any non-priority public use on the refuge. The use of pursuit dogs for hunting is not identified as a priority public use of the National Wildlife Refuge System (Refuge System) under the Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the Refuge System Improvement Act of 1997 (Public Law 105-57). This use is considered a general public use that is not a wildlife-dependent recreational use (as defined in the Improvement Act) and does not contribute to fulfillment of refuge purposes, goals, or objectives as described in current refuge management plans. In accordance with the Appropriate Use Policy (603 FW 1), general public uses are the lowest priorities for refuge managers to consider. The use of pursuit dogs for hunting has been found to be not an appropriate public use of James River National Wildlife Refuge (NWR) for the following reasons.

No unconfined domestic animals, including but not limited to dogs, are permitted to enter upon any national wildlife refuge or to roam at large upon such an area, except as specifically authorized under the provisions for refuge-specific regulations, field trials, or economic uses in Title 50 of the Code of Federal Regulations (50 CFR 26.34, 27.91, and 29.2, respectively). No current refuge-specific regulations or special use permits for field trials or economic uses allow the use of pursuit dogs at James River NWR.

The use of pursuit dogs does not support the biological goals and objectives for James River NWR, as defined in the comprehensive conservation plan (CCP) for the refuge. These goals and objectives emphasize conserving habitats and species of conservation concern. The use of pursuit dogs is not consistent with the approved refuge deer hunting plan (USFWS 1993).

Resources needed to allow the use of pursuit dogs that adequately provides for public and employee sanitation and safety, without disturbing or harming wildlife species, would divert existing and future resources from accomplishing priority refuge tasks. It also presents unacceptable levels of risk from the potential negative impacts on sensitive habitats, migratory birds, and other wildlife species, and could present conflicts with other refuge users. If the refuge allowed the use of dogs, the refuge staff would have no way to adequately control the number and actions of dogs used for hunting. Dogs could not be prevented from entering the closed areas of the refuge. Hunting from portable tree stands has long been recognized as an effective way of hunting white-tailed deer and is the desired method to be used on James River NWR.

The use of pursuit dogs for hunting is not consistent with certain criteria for a quality refuge recreational experience and may conflict with priority public uses. The Service Manual (603 FW 2) states that a quality recreational experience minimizes or eliminates conflicts with other compatible wildlife-dependent recreation, minimizes conflict with neighboring landowners, promotes accessibility and availability to a broad spectrum of the American people, and promotes stewardship and conservation. Free-roaming dogs may jeopardize the safety of refuge visitors and staff, and may interfere with priority recreational uses. Displacement of wildlife by dogs, for instance, may disrupt wildlife observation.

For these reasons, we have determined that the use of pursuit dogs for hunting is not an appropriate public use for the refuge.

**FINDING OF APPROPRIATENESS OF A REFUGE USE**

Refuge Name: James River National Wildlife Refuge

Use: Commercial Forest Management for Habitat Management

This form is not required for wildlife-dependent recreational uses, 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? | ✓ | |
| (b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)? | ✓ | |
| (c) Is the use consistent with applicable Executive orders and Department and Service policies? | ✓ | |
| (d) Is the use consistent with public safety? | ✓ | |
| (e) Is the use consistent with goals and objectives in an approved management plan or other document? | ✓ | |
| (f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed? | ✓ | |
| (g) Is the use manageable within available budget and staff? | ✓ | |
| (h) Will this be manageable in the future within existing resources? | ✓ | |
| (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? | ✓ | |
| (j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future? | ✓ | |

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 ✓ 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** ✓

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.**

**FWS Form 3-2319**
**02/06**

## JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE

**Refuge Name:** James River National Wildlife Refuge

**Use:** Commercial Forest Management for Habitat Management

**NARRATIVE:**

In accordance with the 2006 U.S. Fish and Wildlife Service (Service) Appropriate Use Policy (603 FW 1), the refuge manager must first determine if the use is appropriate prior to allowing any non-priority public use on the refuge. The use of commercial forest management is not identified as a priority public use of the National Wildlife Refuge System (Refuge System) under the Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the Refuge System Improvement Act of 1997 (Public Law 105-57). This use is considered a specialized use that is not a wildlife-dependent recreational use (as defined in the Improvement Act). Commercial forest management is a refuge management economic activity, meaning it is a management activity on a national wildlife refuge that results in generation of a commodity which is or can be sold for income or revenue or traded for goods or services (50 CFR 25.12). The use of commercial forest management has been found to be an appropriate public use of James River National Wildlife Refuge (NWR) for the following reasons.

Commercial forest management is considered an economic use under Title 50 of the Code of Federal Regulations (50 CFR 29.1). Therefore, it must contribute to the purposes for which the refuge was established or the mission of the Refuge System.

Forest management at James River NWR is integral to meeting the refuge's wildlife habitat objectives. Since refuge establishment in 1991, we have employed sound forest management techniques with the intention of maximizing refuge bald eagle production. Specifically, we aimed to maximize the number and use of refuge nocturnal roost sites, increase the use of the refuge diurnal feeding roost, and transform James River NWR into a world-class showcase for the management of the bald eagles in eastern North America (USFWS 1996).

From a practical standpoint, the optimum means to achieve this goal is with commercial forest management, subject to management prescriptions prepared and overseen by a refuge forester. Commercial loggers have the capability to treat the acreages desired and can do so most efficiently and economically. In many cases, commercial logging will attain our desired outcome at no cost to the refuge and a slight financial gain for the American public. The refuge lacks the equipment and personnel to carry out timber thinning program unaided. As of August 2013, 450 acres of dense loblolly pine stands have been mechanically thinned by commercial loggers (USFWS 2013).

Timber sales are based on current market value. Funds generated by the sale of timber are used to support the refuge's forest management program, including additional stand inventories and related roadwork. When appropriate, infrastructure maintenance funds projects directly associated with timber sales, such as road maintenance, culvert repair, gate and sign fabrication and installation. Sufficient funds from the sale are retained by the permittee to purchase supplies, materials, and labor necessary to address any impacts to the refuge resulting from current or future phases of the operation.

Commercial forest management facilitates the management of the refuge's forests and is the preferred method of meeting the habitat needs of forest-dependent birds. For these reasons, we have found commercial forest management contributes to the purposes for which the refuge was established and the mission of the Refuge System and, therefore, is an appropriate refuge use under the Service's policy on the appropriateness of refuge uses (603 FW 1). For these reasons, we have determined that the use of commercial forest management is an appropriate use of James River NWR.

**LITERATURE CITED:**

U.S. Fish and Wildlife Service (USFWS). 1996. Forest Management Plan: James River National Wildlife Refuge, Prince George County, Virginia. U.S. Fish and Wildlife Service, Hopewell, Virginia.

---. 2013. FY2013-2016 Prescribed Fire Plan for James River National Wildlife Refuge.

# COMPATIBILITY DETERMINATION

**USE:**

Commercial Forest Thinning for Habitat Management

**REFUGE NAME:**

James River National Wildlife Refuge

**ESTABLISHMENT DATE:**

March 27, 1991

**ESTABLISHING AND ACQUISITION AUTHORITIES:**

James River National Wildlife Refuge (NWR, refuge) was established on March 27, 1991, under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), as amended.

**PURPOSES FOR WHICH ESTABLISHED:**

The purpose for which James River NWR was established is: "…to conserve (A) fish or wildlife which are listed as endangered species or threatened species…or (B) plants…" (16 U.S.C. 1534 [Endangered Species Act of 1973]).

**NATIONAL WILDLIFE REFUGE SYSTEM MISSION:**

The mission of the National Wildlife Refuge System (Refuge System) is "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" (Refuge System Administration Act of 1966 [16 U.S.C. 668dd-668ee], as amended by the Refuge System Improvement Act of 1997 [NWRSIA][Public Law 105-57]).

**DESCRIPTION OF USE:**

**(a) What is the use? Is the use a priority public use?**
The use is commercial forest management, specifically thinning of overstocked pine stands using commercial contractors. This use 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 NWRSIA.

Commercial forest management will be performed for the primary purpose of creating and/or improving wildlife habitat to ensure a diversity of forest structure and composition. Commercial forest management contributes to the refuge's purposes and habitat and species goals when conducted to manage and improve habitat for wildlife. Commercial forest management may include a variety of accepted silvicultural practices, such as thinnings and release cuttings to remove pole, or pulpwood; regeneration cuts such as seed tree, selection, or shelterwood cuts which would yield products ranging from pulpwood to saw timber; and salvage cuts performed as a result of storm, insect or disease damage which could result in the sale of any or all of the above mentioned forest products. Commercial management practices are the preferred method to safely and efficiently manage refuge forests in a cost-effective manner. It is impractical for the refuge to

acquire the necessary equipment and staff to efficiently conduct these management actions.

**(b) Where would the use be conducted?**
Commercial forest management may occur on any of the refuge's 2,653 acres of pine-dominated forest, progressing through 100- to 150-acre units at a time as determined in advance by refuge manager or his/her designee.

**(c) When would the use be conducted?**
Commercial forest management operations may occur at any time of the year, but will not be conducted continuously through the year. Thinning of pine trees may occur on more than one tract each year, and thinning of each tract may occur at different times of the year depending on individual site characteristics, stand conditions, and other resource concerns. All forest management will occur at times designed to minimize unacceptable impacts on resources (e.g., erosion, rutting, or wildlife disturbance), while maximizing the desired silvicultural results such as forest health improvements and native understory regeneration. Soil moisture levels, bald eagle nesting, and seasonal ground nesting bird activity will determine the appropriate timing for forest management efforts on each selected tract.

**(d) How would the use be conducted?**
Sites for mechanical stem reduction by commercial loggers would be identified in advance by refuge using pine-dominated forest tract information from a refuge timber cruise (Carolina Silvics 2006). Refuge staff would prepare a list of the pine-dominated stands to be logged. Service archaeologists would map and flag archaeological sites and sensitive areas with a buffer zone of 200 feet.

Commercial loggers would use mechanized equipment to remove 30 to 40 percent of the stems per acre, leaving a residual basal area of 85 to 100 square feet per acre. We will continue to conduct forest management activities at James River in accordance with standard operating procedures that were reviewed by the State Historic Preservation Officer (SHPO), as well as Virginia Department of Forestry Best Management Practices (USFWS 2006), to allow logging to occur without further SHPO review. If necessary, we would work cooperatively to update the standard operating procedures to ensure protection of the refuge's cultural resources. The current standard operating procedures include:

- Outfit any equipment with high flotation tires.
- Mark known archaeological sites in the field and excluding these areas from any forest management activities.
- Use grapple skidders instead of cable skidders.
- Create any new log landings without lowering the grade.
- Use skid trails only on level stands where no water diversion will be needed.
- Use only low pressure equipment for pre-mechanical thinning of small diameter trees.
- Identify some areas to be excluded from logging.

Prospective bidders will be sought on the basis of their demonstrated ability and willingness to comply with standard operating procedures developed to ensure the protection of natural and cultural resources during forest thinning. Bids will be reviewed by refuge staff in consultation with the Division of Contracting and General Services and other Service staff with experience in forest management. The successful bidder will be issued a contract and a special use permit to conduct the thinning project, with special conditions that include the special operating procedures, other best management practices, time of year restrictions, and

other conditions as necessary to ensure a safe, effective operation to minimize impacts on resources. If any conditions are violated, the permit and contract could be revoked and work would cease. If the permit is revoked, an allowance would be agreed upon between the Service and the contractor for the removal of the contractor's equipment only. The severity of the response will depend on the severity of the violation. In cases where the refuge is pleased with the work completed, multi-year agreements may be approved.

Timber sales will be based on current market value. Funds generated by the sale of timber will be used to support the forest management program, including additional stand inventories and related roadwork. When appropriate infrastructure maintenance is needed, the refuge will identify and authorize funding for the contractor or its agents to conduct projects directly associated with timber sales, such as road maintenance, culvert repair, gate and sign fabrication and installation. Sufficient funds from the sale will be retained by the permittee to purchase supplies, materials, and labor necessary to address any impacts resulting from that or future phases of the operation.

**(e) Why is the use being proposed?**

The forest management action is prompted by U.S. Fish and Wildlife Service (Service) policy to ensure that the biological integrity, diversity, and environmental health of the NWRS is maintained (601 FW 3). In an effort to consider and protect the broad spectrum of fish, wildlife, and habitats potential at the James River NWR, restoration is required within the pine-dominated forest. Prior to 1991, the land that is now part of the refuge was owned and managed as a commercial timber operation. Much of the land had been clear cut just prior to refuge establishment.

Regenerating pine forests on the refuge have grown too thickly to be of significant value to migratory birds, and present a wildfire hazard. An overstocked pine forest is a "biological desert" according to the author of the Partners in Flight Physiographic Plan for the Mid-Atlantic Region (Watts 2013 personal communication). Pine stands on the refuge now have up to 700 stems per acre, whereas a desired goal would ultimately be in the range of 100 to 125 trees per acre. A 2006 timber cruise found a basal area of 140 square feet per acre. To improve habitat quality and reduce fire hazard, we will remove 30 to 40 percent of the stems to reach a basal area of 85 to100 square feet per acre. Thinning pine density and periodic prescribed burning to reduce woody debris will reduce the future potential for wildfire and associated carbon release.

The refuge lacks the equipment and personnel to carry out timber thinning program unaided. Since these trees have commercial value as pulp, bio-fuel, and saw timber, using a commercial contractor to achieve refuge management goals is the most efficient, cost-effective, and safest approach.

## AVAILABILITY OF RESOURCES:

Resources required to implement this program include staff time to conduct the following tasks, and their estimated costs are detailed in table B.2.

**Table B.2. Current Annual Administrative Costs Associated with Commercial Forest Management.**

| Activities | Resource | Annual Duration | Rate[1] | Cost |
|---|---|---|---|---|
| Identify forest compartments ready for thinning | Refuge Manager (GS-13) | 2 hours | $51 / hour | $102 |
| | Deputy Refuge Manager (GS-12) | 2 hours | $43/ hour | $86 |
| | Wildlife Refuge Specialist (GS-11) | 8 hours | $38/ hour | $304 |
| | Wildlife Biologist (GS-11) | 6 hours | $38 / hour | $228 |
| Contract preparation and soliciting bids | Forester (GS-12) | 8 hours | $43 / hour | $344 |
| Proposal review, coordination, and SUP preparation, oversight | Refuge Manager (GS-13) | 2 hours | $51 / hour | $102 |
| | Deputy Refuge Manager (GS-12) | 2 hours | $43 / hour | $86 |
| | Wildlife Refuge Specialist (GS-11) | 16 hours | $38/ hour | $608 |
| | Wildlife Biologist (GS-11) | 8 hours | $38 / hour | $304 |
| **TOTAL** | | | | **$2,164** |

[1] Maximum hourly rate in 2014 dollars, rounded to nearest dollar.

Funding within the refuge's base budget is sufficient to support this high priority task, which is supported by fire management and habitat management goals of the refuge. Funding from the timber contract will be held by the contractor for maintenance or repair of infrastructure improvements affected by the thinning project; no refuge funds will be needed for either of these purposes.

## ANTICIPATED IMPACTS ON REFUGE PURPOSE:

Commercial forest management to improve forest health and wildlife habitat on the refuge could have the following impacts:

*Soil Impacts*
The increased use and on-going maintenance of roads, creation of logging decks, and the operation of heavy equipment may impact soil, causing rutting and erosion (Helfrich et al. 1998, Wiest 1998, Cullen 2001). To mitigate potential impacts and minimize erosion, timber harvesting operations will follow the best management practices as recommended by State forestry agencies, and Standard Operating Procedures for Protecting Historic and Archaeological Resources During Mechanical Tree Cutting Activities (Service/VDHR). Timber harvesting will occur during dry periods or in winter months when temperatures freeze the ground sufficiently to reduce soil erosion, compaction, and rutting. Active forest management will occur when site-specific soil conditions are appropriate.

*Aquatic Resource Impacts*
Forest management operations may have negative impacts on both water quantity and water quality. Data from forested experimental watersheds in the Eastern United States indicated that leaching of nutrients after timber harvesting, especially clear cutting, tend to increase (Bormann et al. 1968, Bormann et al. 1974), while increases in stream water temperature are highest where revegetation of cutover areas is delayed (deMaynadier and Hunter 1995, Cullen 2001). These factors may have detrimental effects on stream organisms, including fish, invertebrates, and amphibians (Campbell and Doeg 1989).

Maintaining forested buffers near streams and other aquatic resources minimizes impacts on water resources and water quality (Osborne and Kovacic 1993, Castelle et al. 1994, Wilkerson et al. 2006, Bennett 2010). To minimize water quality impacts, road improvements, skid trail planning, harvest operations and interaction with surface and groundwater hydrology will follow best management practices advocated by the State's forestry agency. Selective thinning, not clearcutting will be the primary harvest method. Harvesting will use existing refuge roads; no construction of new roads is anticipated. Stream crossings will be avoided.

*Wildlife and Vegetation Impacts*
Commercial forest management can have a number of localized and broader impacts on wildlife-related components of forests including: damage to understory vegetation (Scheller and Mladenoff 2002), alterations of microhabitat environments (deMaynadier and Hunter 1995), and changes in the abundance and type of coarse woody debris (deMaynadier and Hunter 1995, Siitonen 2001). Less downed wood and fewer large-diameter logs are likely to accumulate under a short-rotation (less than 50 years) harvest, whole-tree harvests, and selection cuts than would occur under long rotations or in uncut forests, affecting soil moisture regimes and forest floor amphibians and small mammals (Gore and Patterson 1986, deMaynadier and Hunter 1995). Harvesting may also leave the remaining trees more susceptible to wind throw (Ruel 1995), facilitate the spread of invasive plants (Sakai et al. 2001), and disturb wildlife temporarily (deMaynadier and Hunter 1995, Campbell et al. 2007, Holmes and Pitt 2007).

Mitigation of such impacts is possible through careful planning and implementation. Use of selective logging methods, equipment with reduced ground disturbing capabilities, and time of year and soil moisture

restrictions will minimize disturbance to wildlife and understory vegetation, pre-harvest multi-resource surveys, strategic layout of skid trails, and clear designation of no-cut zones will minimize impacts.

*Visitor Impacts*
The thinning operation may disturb refuge visitors, cause safety issues, or detract from visitors' aesthetic experience. When safety considerations warrant, areas of the refuge undergoing active management will be temporarily closed. The bulk of the proposed thinning is to occur outside of the designated public use area and only in small tracts (i.e., less than 250 acres) any one time; therefore, impacts to visitors will be minimal.

**PUBLIC REVIEW AND COMMENT:**

As part of the comprehensive conservation plan (CCP) process for James River NWR, this compatibility determination will undergo a public review and comment period of 30 days following the release of the draft CCP and environmental assessment (EA).

**DETERMINATION (CHECK ONE BELOW):**

___ Use is not compatible

_X_ Use is compatible, with the following stipulations

**STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:**

James River NWR has developed a list of criteria for determining whether any given refuge location would be appropriate for selective pine thinning operations. These criteria would apply to current and future forest management programs. Criteria are as follows:

- Areas to be harvested will be determined on an annual basis to ensure that forest management activities support the wildlife and habitat goals outlined in the CCP and subsequent Habitat Management Plan (HMP) and Annual Habitat Management Work Plan (AHWP). Individuals issued permits for harvest of forest products on the refuge must adhere to the terms contained therein, including the SHPO-approved standard operating procedures for protecting historic and archaeological resources during mechanical tree cutting activities at Eastern Virginia Rivers NWR Complex in the Commonwealth of Virginia and the Best Management Practices as outlined by the Virginia Department of Forestry.

- Forested areas that are scheduled for thinning are surveyed for wetlands, vernal pools, and other sensitive features. No-cut buffer zones are established around any sensitive features. Permittees are required to use all applicable Best Management Practices as determined by the State forestry agency. In some instances, the refuge may exceed state recommendations for specific resource protection objectives.

- State forestry representatives check refuge timber operations for compliance with State laws and regulations. Refuge staff make regular site inspections to ensure operational compliance with the terms of the special use permit.

- Any forest management on hydric soils or slopes of over 30 percent will forbid the use of heavy equipment.

- The forest management program will employ adaptive management to access and modify silvicultural prescriptions.

**JUSTIFICATION:**

Timber management is a traditional and effective method of improving habitat for wildlife and reducing the threat of catastrophic wildfire.

Although commercial timber harvesting is not a priority use for the Refuge System, it is a management tool that can help maintain and enhance forest habitat on the refuge for high-priority forest-dwelling migratory birds, such as chuck-wills widow, as well as other native plants and animals. By helping maintain high-quality habitat on the refuge, timber harvesting will contribute to the refuge's purposes, as well as the refuge's biological goals outlined in the CCP and EA. It is therefore determined that commercial timber harvesting within pine-dominated stands is a compatible use for James River NWR.

To fund the thinning effort solely through station funds would otherwise not be possible. We have insufficient resources to conduct this management practice within our current staffing and budget. The commercial value of overstocked refuge pine forests presents an opportunity to use a contractor to conduct needed forest management at no cost to the Service. This provides an economic stimulus to the community and achieves refuge objectives to improve habitat.

In accordance with 50 CFR 29.1, commercial timber management, as described in this compatibility determination, significantly contributes to the fulfillment of the Refuge System mission or the purposes for which the refuge was established.

**SIGNATURE:**

Refuge Manager: _____ _____

(Signature) (Date)

**CONCURRENCE:**

Regional Chief: _____ _____

(Signature) (Date)

**MANDATORY 10 YEAR RE-EVALUATION DATE:** _____

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# COMPATIBILITY DETERMINATION

**USE:**

Hunting

**REFUGE NAME:**

James River National Wildlife Refuge

**ESTABLISHING AND ACQUISITION AUTHORITY(IES):**

James River National Wildlife Refuge (NWR, refuge) was established on March 27, 1991, under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), as amended.

**REFUGE PURPOSE(S):**

The purpose for which James River NWR was established is: "…to conserve (A) fish or wildlife which are listed as endangered species or threatened species…or (B) plants…" (16 U.S.C. 1534 (Endangered Species Act of 1973)).

**NATIONAL WILDLIFE REFUGE SYSTEM MISSION:**

The mission of the National Wildlife Refuge System (Refuge System) is "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" (Refuge System Administration Act of 1966 [16 U.S.C. 668dd-668ee], as amended by the Refuge System Improvement Act of 1997 [NWRSIA][Public Law 105-57]).

**DESCRIPTION OF USE:**

**(a) What is the use? Is the use a priority public use?**
The use is public hunting of white-tailed deer on the refuge. The NWRSIA identified hunting as one of the six, priority, wildlife-dependent recreational uses to be facilitated in the Refuge System. The Act encourages the U.S. Fish and Wildlife Service (Service) to provide opportunities for these uses when compatible with the purposes for which the refuge was established.

**(b) Where would the use be conducted?**
Hunting will occur on approximately 3,900 acres within the 4,324-acre refuge. Hunters must access refuge lands from designated access points. Deer hunting will take place within the refuge boundary only from designated areas. The refuge does not allow hunting on the refuge in safety zones, administrative areas, while in or around vehicles, or on public roads. To maximize visitor safety, we would not allow hunting in the designated public use area. The specific zones and stand locations will be assessed after each hunting season and adjusted as necessary to meet deer management objectives.

**(c) When would the use be conducted?**
The refuge is currently open to the hunting of white-tailed deer on specific days during the State's archery, muzzleloader, and shotgun seasons. The use would be conducted in designated areas of the refuge in accordance with Federal, State, and county regulations and seasons (*http://www.dgif.virginia.gov/hunting*; accessed June 2012). Specific dates for hunting on James River NWR are chosen by refuge staff on an annual basis.

Hunting opportunities are offered on a limited season, permit-only basis. The refuge offers up to 19 days of archery deer hunting in October; 2 days of muzzleloader deer hunting on the first two Saturdays of the season (typically in late October and early November); and 4 days of shotgun hunting (typically in mid-November through early December). In accordance with the guidelines set forth in the 1985 National Wildlife Federation publication, Bald Eagles in the Chesapeake: A Management Guide for Landowners, hunting will not occur after December 14 (USFWS 1993).

In accordance with the State's hunting regulations, legal hunting hours are one half-hour before sunrise to one half-hour after sunset. Permitted hunters may enter the refuge no more than one hour before legal hunting time and depart no later than one half-hour after legal hunting time.

**(d) How would the use be conducted?**

Hunting will occur according to Commonwealth of Virginia's regulations and will be subject to refuge-specific regulations, according to the Federal regulations published in Title 50 of the Code of Federal Regulations (50 CFR 32.66). However, the refuge manager may, upon annual review of the hunting program and in coordination with the Virginia Department of Game and Inland Fisheries (VDGIF), impose further restrictions on hunting, recommend that the refuge be closed to hunting, or further liberalize hunting regulations within the limits of state seasons and regulations. We may restrict hunting if it conflicts with other, higher priority refuge programs or endangers refuge resources or public safety.

*Hunt Administration*

In 2011, the Service established a Memorandum of Agreement (MOA #503130-11K006) with VDGIF to administer a quota archery hunt at the refuge. This agreement will be effective for 5 years and renewed as appropriate. VDGIF works through a contractor (currently CyberData Technologies, Inc., NY) to process hunter applications, make equitable and random selections of hunters to participate in the hunt, notify all applicants about the selection outcome, and provide applicant contact information to the Service. The VDGIF contractor charges a processing fee of $7.50 to each applicant as reimbursement for services provided; this fee may be modified in the future.

Refuge quota archery hunts are advertised on the refuge and VDGIF Web sites (*http://www.fws.gov/refuge/James_River* and *http://www.dgif.virginia.gov/hunting/quotahunts*, respectively), as well as in the annual "Hunting & Trapping in Virginia" regulations digest published by VDGIF. The refuge muzzleloader and shotgun hunts are advertised in local publications (e.g., Hopewell News, Prince George Journal, Progress Index newspapers) and the Prince George County Web site (*http://www.princegeorgeva.org*). Hunt flyers are distributed at local convenient stores and businesses. Participation instructions are included in these announcements. A limited number of scouting days prior to the application deadline are offered to help interested parties determine if they want to submit an application to hunt on the refuge. Additional scout days are provided just prior to the beginning of each hunt season.

Hunters wishing to participate in the refuge's archery hunt apply through the State's quota hunt lottery system. Hunters may apply by mail, telephone, or through the VDGIF's Web site (*http://vaquotahunts.com*). Each selected hunter may be accompanied by one guest hunter, who must acquire a refuge permit to participate in the hunt. Up to 50 hunters may participate on any or all of a 19-day still archery season in October, excluding Sundays (950 hunt use days annually). Each archery hunter must each complete a "White-tailed Deer Refuge-specific Hunting Permit Conditions" form, which details requirements of the hunt as identified in 50 CFR 32.66.

Hunters wishing to participate in the refuge's muzzleloader or shotgun hunts are selected on a first-come, first served basis; hunters report to the refuge's visitor contact station (map B.6 in the draft CCP and EA) on the hunt day to acquire a refuge-issued permit for the day. Each hunter must complete a "Quota Deer Hunt Application" (Service Form 3-2354). The refuge accommodates up to 70 hunters per day on each of 2 muzzleloader hunting days, on the first two Saturdays of the season (140 hunt use days annually). The

refuge accommodates up to 70 hunters per day on each of 4 shotgun hunting days, typically in mid- to late-November and early December (280 hunt use days annually).

*Permit Fees*
A refuge archery hunt permit fee of $50 is charged to each hunter participating in the 19-day archery deer season; this fee may be modified in the future. A maximum of 50 permits are issued annually for the archery deer season.

A refuge firearm hunt permit fee of $10 per day is charged to each hunter participating on a muzzleloader or shotgun deer season hunt day; this fee may be modified in the future. A maximum of 70 permits per day are issued for the muzzleloader and shotgun deer season days.

Once hunt administrators receive the signed permit conditions form and associated fee payment, they issue a permit and provide additional information about the hunt (e.g., refuge hunt map, details about additional scouting dates). The archery hunt permit is mailed to the selected applicant by the VDGIF contractor. The firearm hunt permit is issued by the refuge to the applicant for one designated hunt day; their designated hunt date is specified on the non-transferrable permit. Each permit specifies that deer may be hunted, as well as the harvest limits in accordance with the State regulations. Harvest limits may change under future State regulations.

*Hunt Day*
The VDGIF contractor completes the bulk of the administration portion of the archery hunt prior to the commencement of the archery season. Hunters sign-in and sign-out on each day they participate in the refuge's archery hunt. The sign-in/sign-out sheet is located at the refuge information kiosk, and each hunter provides his name, vehicle type, and hunting zone information. Once completed, the hunter proceeds to his hunt zone and hunts.

On each day of the hunt, interested participants come to the refuge's visitor contact station to complete required paperwork, choose their hunting location, pay, and receive their permit. Once completed, hunters drive to or near the identified hunt location and hunt. Each hunter is required to hunt within 100 feet from their designated hunt stand location as identified in refuge hunt permit conditions.

All persons participating in the refuge hunt must have a valid State hunting license and refuge permit in their possession while on the refuge. Hunters are required to wear at least 400 square inches of solid-colored, hunter-orange clothing or material in a conspicuous manner on the head, chest, or back.

Prohibited activities include:

- The use of "man drives," defined as individual or group efforts intended to "push" or "jump" deer for the purposes of hunting.
- Discharging a firearm within 300 feet of any building.
- Possessing a loaded firearm on road or in "no hunt zones."
- Hunting with dogs.
- Smoking.
- Use or possession of alcohol.
- Creating fires.

- Hunting while in or around vehicles.
- Hunting on roads.

*Harvest Limits and Reporting Requirements*
Hunters are solely responsible for the retrieval and transport of harvested deer back to their vehicle. The refuge permits hunting within State guidelines in compliance with a hunt program that we may adjust each year to enhance safety and sound wildlife management.

All archery hunters that successfully harvest deer are to check their game through a State game checking system. Hunters receive a confirmation number for verification of the check-in. The current means of processing this information is by calling 1-866-GOT-GAME (468-4263) or online (*https://www3.dgif.virginia.gov/gamecheck*). Contact VDGIF as this information may change within the life of this document. Refuge staff are developing a more efficient way to collect Deer Management Assistance Program (DMAP) information during our archery season.

Firearms hunters bring all harvested deer to the refuge's visitor contact station for the hunt administrator to document, weigh, and conduct a health assessment of each deer. This is a requirement for the refuge's involvement in the DMAP. A VDGIF check card is completed and a copy provided to the hunter. At the end of the season, a copy of all harvest data is mailed to the State.

**(e) Why is the use being proposed?**
The NWRSIA identifies hunting a priority public use that, if compatible, is to receive enhanced consideration over other general public uses. As with fishing, we recognize hunting as a healthy, traditional outdoor past time and an important cultural activity in this area of Virginia. Hunting promotes public understanding and appreciation of natural resources and their management on all lands and waters in the Refuge System.

Hunting is a tool managers use to maintain wildlife populations at an acceptable level. The VDGIF establishes hunting seasons and bag limits to meet population objectives and to offer people the opportunity to experience a traditional outdoor recreational activity. Game species population objectives are determined by a number of factors (such as prior year(s) harvest totals, available habitat, and landowner tolerances), and each year the seasons and bag limits are designed to remove the harvestable surplus without long-term negative impacts to the population. The ability to effectively manage game species populations depends in large part on the availability of land with quality habitat. Providing hunting opportunities on the refuge will aid the Commonwealth in meeting its management objectives and preserve a wildlife-dependent priority public use long associated with this land.

The Service intends to continue the tradition of wildlife-related recreation on the refuge by allowing hunting in compliance with State and refuge-specific regulations. By allowing this use to continue, hunters can experience this traditional recreational activity, aid the refuge and State in maintaining acceptable game species population levels, gain a better appreciation of the refuge's high quality wildlife habitats, and become better informed about the refuge and the Refuge System.

The Service encourages the development of hunting programs on national wildlife refuges when they are compatible with the refuge's legal purposes, biologically sound, affordable, properly coordinated with other refuge programs, and meet the Service description of a quality hunt. "Quality hunts" are defined as those which are planned, supervised, conducted, and evaluated to promote positive hunting values and ethics such as fair chase and sportsmanship. The Service strives to provide hunting opportunities on refuges which are superior to those available on other public or private lands, and to provide participants with reasonable harvest opportunities, uncrowded conditions, fewer conflicts among hunters, relatively undisturbed wildlife, and limited interference from, or dependence on, mechanized aspects of the sport (605 FW 2).

The refuge opened to public deer hunting in 1992 (57 FR 58108; codified at 50 CFR 32.66). Proposed changes to the refuge-specific regulation revisions have been published in the Federal Register and Title 50 in the CFRs annually since that time. We prepared a compatibility determination and categorical exclusion in 1994 (USFWS 1994). The compatibility determination emphasizes that the objectives for the hunt were to maintain the population of white-tailed deer at a level commensurate with the biological carrying capacity of the available refuge habitat and to provide high quality wildlife-oriented recreation.

## AVAILABILITY OF RESOURCES:

The financial and staff resources necessary to provide and administer these uses at their current levels are now available. We expect the existing financial resources to continue in the future, subject to availability of appropriated funds.

The Refuge Recreation Act requires that funds are available for the development, operation, and maintenance of the permitted forms of recreation. The preseason application fee (required for the James River NWR archery hunt) and refuge hunting permit fee are the minimal amounts needed to offset the cost of facilitating the preseason drawings and manage the hunts. Permit fees may need to be adjusted (increased or decreased) and will be evaluated annually.

Current annual administrative costs associated with the existing refuge-supported operations for the deer hunt program are detailed in table B.3. However, this table does not address the preseason application portion of the hunt program administered by VDGIF contractor; the contract work is a cost savings to the refuge. Permit fees serve as cost recovery for administration of the public deer hunting program (table B.4).

**Table B.3. Current Annual Administrative Costs Associated with Public Deer Hunting.**

| Activities | Resource | Annual Duration | Rate[1] | Cost |
|---|---|---|---|---|
| Program review and oversight, approves hunt conditions, submits updated CFR regulations | Deputy Refuge Manager (GS-12) | 10 hours | $43 / hour | $430 |
| Site preparation, scheduling, collaborates with VDGIF and contractor, responds to public inquiries, promotes use, administers and defines hunt conditions, authors hunt plan | Wildlife Refuge Specialist (GS-11) | 105 hours | $38 / hour | $3,990 |
| Monitors harvest data, collaborates with VDGIF and contractor, defines hunt conditions, participates in deer health assessments | Wildlife Biologist (GS-11) | 32 hours | $38 / hour | $1,216 |
| Conducts patrols, coordinates with Federal and State conservation officers, defines hunt conditions | Federal Wildlife Officer (GL-09) | 16 hours | $39 / hour | $624 |
| Support materials, mailings, and fuel | | | | $100 |
| **TOTAL** | | | | **$6,360** |

Note: Some actions and resulting costs also support other approved public uses (i.e., wildlife observation, photography, environmental education, and interpretation).

[1] Maximum hourly rate in 2014 dollars, rounded to nearest dollar.

**Table B.4. Maximum Costs Potentially Recovered from Allowing Public Deer Hunting Annually.**

| Service Provided | Cost per Unit | Units (on average) | Annual Costs Recovered | Costs Recovered by Service Provider |
|---|---|---|---|---|
| Application Fee | $7.50 / application | 85 / year | $637.50 | DGIF contractor |
| Refuge Hunt Permit Fees | | | | Refuge (80%) |
| Archery | $50.00 / permit issued[+] | 50 / year | $2,500[*] | |
| Muzzleloader | $10.00 / permit issued | 140 / year | $1,400[*] | Region (20%) |
| Shotgun | $10.00 / permit issued | 280 / year | $2,800[*] | |
| | | | **$7,337.50** | **COMBINED TOTAL** |

[+] DGIF contractor receives a portion ($7.50) from permit fees, as a collection fee
[*] Based on maximum participation and collection of full permit fee payments

**ANTICIPATED IMPACTS OF THE USE:**

Hunting can result in positive or negative impacts to the wildlife resource. A positive effect of allowing visitors' access to the refuge will be the provision of additional wildlife-dependent recreational opportunities and a better appreciation and more complete understanding of the wildlife and habitats associated with the Chesapeake Bay ecosystems. This can translate into more widespread and stronger support for the refuge, the Refuge System, and the Service. The following is a discussion of refuge-specific impacts, which are supported by a compilation of baseline information relative to the featured topic.

*Soils and Vegetation*
Repeated visitation to any particular locale at the refuge would continue to cause minor site-specific damage to vegetation. Accidental introduction of invasive plants, pathogens, or exotic invertebrates attached to vehicles, shoes, or clothing is another source of direct minor impacts on vegetation. In places where unmarked paths are created by hunters, little used pathways will retain their dominant vegetation species, but on medium-use pathways some plant species will be replaced and heavily-used paths will often contain invasive species (Liddle and Scorgie 1980).

Using staff observations of past impacts, hunting is expected to have negligible adverse impacts on soils and vegetation in the short and long-term. Disturbance to soils and vegetation may occur when hunters travel off-trail through upland habitats. We expect negligible impacts to soils and vegetation would result because the hunters disperse themselves or are relegated to designated hunt locations across hunting areas, hunters typically only travel as far as needed to find a desirable hunting location, and most vegetative species will have already undergone senescence or become dormant.

Positive indirect effects on the vegetation would result from a reduction in the deer population. The impacts of dense deer populations on forest regeneration and the composition and diversity of the herbaceous understory have been well-documented (Tierson et al. 1966, Behrend et al. 1970, Tilghman 1989). Allowing public deer hunting to continue on the refuge would maintain the habitat as it is now and prevent degradation due to overbrowsing. Well-managed hunting can effectively control deer and produce dramatic changes in the forest vegetation (Behrend et al. 1970). The impact of deer hunting on the vegetation would be positive and result in better regeneration of forest canopy species and an increase in the diversity of the herbaceous understory. In summary, there would be few if any negative impacts from this use on the refuge's vegetation, but there would be beneficial impacts from the decrease of deer browse on the refuge's vegetation due to the decrease in the number of deer on refuge lands.

*Wildlife*
Prior to refuge establishment in 1991, shotgun deer hunting occurred on this property for over 40 years, with no documented disturbance or impact to the bald eagle, indigenous wildlife, or to the habitat (USFWS 1993).

Virginia's prehunt deer population is estimated to be between 850,000 and 1,000,000 deer, and is not at risk

(VDGIF 2007). The State determines seasons and bag limits based on regional deer harvest data. The Commonwealth's deer management program regulates deer hunting toward maintaining at moderate to low population densities, in fair to good physical condition, and below the biological carrying capacity of the habitat (VDGIF 2007). The objective for James River NWR's deer population has been stabilization for 11 of the prior 12 years (VDGIF 2012).

Currently, approximately 65 percent of the available hunt registration spots are filled (Cyrus Brame 2013 personal communication). Information regarding the animal's sex, health, harvest date, harvest means (i.e., archery tackle, muzzleloader, or shotgun), and county of harvest is recorded at the refuge's visitor contact station. Approximately 32 deer have been harvested annually during the past decade. Based on the past 5 years of available State participation data and refuge harvest success ratios, deer hunters participating in our muzzleloader and shotgun seasons have a successful harvest ratio that is nearly the State average for 2012 (Brame 2013 personal communication). Since 2006, no deer have been reported to have sloughing or splitting hooves on two or more feet, a condition indicative of hemorrhagic disease. According to our VDGIF District Biologist, the weights of deer harvested from the refuge look good and on par with Prince George County data (Proctor 2013 personal communication).

The use does have some disturbance to other native wildlife present on the refuge. However, the timing of the hunt is such that many native wildlife species are not present or dormant at the time of the hunt and, therefore, unlikely to be affected. White-tailed deer hunting is currently the single most important public use on the refuge that would impact mammals, including deer and other forest-dependent wildlife. Impacts on amphibians and reptiles are expected to be negligible because these species are preparing or already hibernating or in torpor (dormancy) during the hunt season on the refuge (typically occurring mid-November through mid-December). Impacts to invertebrates such as butterflies, moths, other insects, and spiders are expected to be negligible. Invertebrates are not active during the majority of the hunting seasons and would have few interactions with hunters during the hunting season.

Managing the deer population at a level that refuge habitat can support prevents direct negative impacts to other wildlife and habitat present. For example, heavily browsed habitats (a result of insufficient food for the herd size) have shown to decrease migratory song bird foraging opportunity (deCalesta 1994).

Fall is the season for bird migration, and hunting may disturb their resting and foraging during this critical time. The impacts from hunting are not known, but related to the frequency, type, and duration of the disturbance. Migrating and wintering birds may be foraging and roosting in upland and wetland habitats. Hunting activity may cause these birds to unnecessarily take flight, expending energy resources when food resources are limited. Because this use is not concentrated in space or time (it occurs on select days throughout the refuge during designated times within the hunting season), the disturbance effects on wildlife that are using the refuge during fall and winter are not expected to be significant.

Access near interior creeks and tributaries may result in flushing of waterfowl and waterbirds. Additionally, waterfowl and waterbirds often move out of the creeks during daylight hours to forage and loaf in and along the main stem of the James River. Other types of migratory birds, namely neotropical migrant species, have already departed the refuge for wintering grounds further south.

Lead-based ammunition used for deer hunting has the potential to cause lead poisoning in bald eagles or other birds of prey. Unrecovered animals and offal (gut) piles from deer can contain lead fragments that, if ingested, could expose birds to lead. We do not collect information from hunters that allow us to estimate the rate or number of unrecovered deer carcasses produced every year; however, over the past 5 years, the muzzleloader and shotgun hunt program has averaged 206 hunters per year with an annual average total harvest of just over 32 deer per year (Brame 2013 personal communication). Areas within the refuge designated for the deer hunt are in the heavily wooded areas of the pine-dominated forest, moist hardwood forest, and floodplain forest away from existing bald eagles nests. We believe that unrecovered animals containing lead shot from the shotgun and muzzleloader hunts would have negligible impacts to bald eagles based on the small number of carcasses potentially produced each year. No eagles or non-target animals

have been found to have died from lead poisoning on the refuge, though the potential exists because lead shot is used for deer hunting (Brame 2014 personal communication). We encourage hunters to use lead-free shot on the refuge.

Anticipated direct, indirect, and cumulative impacts to endangered species, threatened species, and other special status species of the refuge are described below. The refuge requested Section 7 informal consultation with the Service's Virginia Field Office under the Endangered Species Act (16 U.S.C. 1536) on all the actions in alternative B of the draft comprehensive conservation plan (CCP) and environmental assessment (EA) for James River NWR, including hunting, that could potentially impact listed species. This process resulted in a finding that our proposed actions are not likely to adversely affect the listed species or their associated habitats on the refuge. Other, non-game special status species are not expected to be impacted by hunting at James River NWR. We are working with our Virginia Ecological Services Field Office to conduct an intra-Service section 7 consultation to ensure compliance with the Endangered Species Act (16 U.S.C. 1536) on all actions in this draft CCP and EA.

The bald eagle continues to be protected federally under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (BGEPA). The BGEPA, originally passed in 1940, provides for the protection of the bald eagle and the golden eagle (as amended in 1962) by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 U.S.C. 668(a); 50 CFR 22). Bald eagles (*Haliaeetus leucocephalus*) are known to nest, roost, and winter at James River NWR. Since the refuge was opened to any public use, we have imposed geographic and time-of-year restrictions on the public use activities to protect nesting bald eagles. We would continue to provide direct, moderate, long-term impacts to bald eagle nesting areas by managing visitor access in accordance with BGEPA requirements. In accordance with the National Bald Eagle Management guidelines (USFWS 2007), visitor use has not been allowed to occur within 330-feet of active nests. We would continue to manage public use activities in accordance with Federal laws and regulations.

*Public Use and Access*
Refuge lands have become increasingly important in the region as a place to engage in hunting activity. Hunters have the opportunity to harvest a renewable resource in a traditional manner, which is culturally important to the local community. Refuge lands allow the public to enjoy hunting at no or little cost in a region where private land is leased for hunting, often costing a person several hundred to several thousand dollars per year for membership. Refuge hunting programs provide opportunities to experience a wildlife-dependent recreational activity, instill an appreciation for and understanding of wildlife, the natural world and the environment, and promote a land ethic and environmental awareness. The minor beneficial impacts of providing the existing level of wildlife-dependent activities include helping meet existing and future demands for outdoor recreation and education.

The refuge would also be promoting a wildlife-oriented recreational opportunity that is compatible with the purpose for which the refuge was established. The public would have an increased awareness of the refuge and the Refuge System and public demand for areas to hunt and learn about wildlife would be met. Over time, it is reasonable to believe that public awareness of the refuge would increase. This increase would translate into participation in the hunting program and other approved wildlife-dependent activities. We anticipate that the refuge would continue to meet the demand as it increases in the long term.

## PUBLIC REVIEW AND COMMENT:

As part of the CCP process for James River NWR, this compatibility determination will undergo extensive public review, including a comment period of at least 30 days following the release of the draft CCP and EA.

**DETERMINATION (CHECK ONE BELOW):**

___ Use is not compatible

_X_ Use is compatible, with the following stipulations

**STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:**

The following stipulations will help ensure the refuge white-tailed deer hunting program is compatible with refuge purposes.

- Hunters must abide by all applicable Federal, State, and refuge-specific regulations. Refuge-specific regulations are published annually in the Federal Register, Title 50 of the CFRs, and on a form that hunters must sign to be issued a hunt permit (see attachment 1).

- Hunters are encouraged to use lead-free shot.

All deer hunters must adhere to the following stipulations, which are updated and published annually in 50 CFR 32.66, in addition to State regulations:

- We require hunters to possess and carry a refuge hunting permit (contains date selected to hunt and permit number), along with their State hunting license while on refuge property. We require hunters to display a vehicle permit (contains date selected to hunt and permit number) provided by the refuge on the dashboard of their vehicle while on the refuge so that the permit is visible through the windshield.

- We require firearm hunters to complete and sign a Quota Deer Hunt Application (Service Form 3-2354) and provide the application and hunt fee to the hunt administrator at the Refuge Hunter Check Station on the morning of each hunt on a first-come-first-served basis. The hunt administrator will then provide the applicant a 1-day refuge hunting permit.

- We require persons who wish to hunt during the refuge's archery season to obtain a refuge hunting permit through a lottery administered by a commercial vendor of VDGIF. We notify successful applicants by mail or email, and if we receive the hunting fee by the date identified in the mailing, we mail refuge hunting permits to successful applicants.

- We allow archery, muzzleloader, and shotgun hunting on designated days as indicated on refuge hunting permits.

- We allow the same daily bag composition and limit per VDGIF regulations for Prince George County.

- We prohibit dogs.

- We allow only portable tree stands that hunters must remove at the end of each hunt day (see 50 CFR 27.93). We prohibit damage to trees (see 50 CFR 32.2(i)).

- We require hunters during archery-only seasons to wear, in a visible manner, a minimum of 100 square inches (645 $cm^2$) of solid-colored-hunter-orange clothing or material while moving to and from their stand and/or hunting location.

- We require hunters during firearms and muzzleloader seasons to wear in a conspicuous manner on head, chest, and back a minimum of 400 square inches (2,600 $cm^2$) of solid-colored- hunter-orange clothing or material.

- We require that hunters during firearms and muzzleloader seasons remain within 100 feet (30 m) of their assigned stand while hunting.

- We require that hunters using a muzzleloader must hunt from a stand elevated 10 feet (3 m) or more above the ground.

- Persons possessing, transporting, or carrying firearms on national wildlife refuges must comply with all provisions of State and local law. Persons may only use (discharge) firearms in accordance with refuge regulation (see 50 CFR 27.42 and specific refuge regulations in 50 CFR 32).

- We prohibit the discharge of firearms or archery equipment across or within State-maintained or refuge roads, including roads closed to vehicles, as shown on refuge hunt maps.

- We prohibit the use of flagging to mark trails or for any other purpose.

- An adult age 21 or older, possessing and carrying a valid hunting license and refuge hunting permit, must accompany and directly control youth hunters ages 12 to 17. We prohibit persons under age 12 to hunt on the refuge.

- We prohibit the use or possession of alcohol while hunting on the refuge (see 50 CFR 32.2(j)).

- We require hunters to report accidents or injuries to the refuge office or sheriff's office within 24 hours after the incident. Hunters must report accidents resulting in serious injury to the sheriff's office immediately.

- We require hunters to unload hunting bows, crossbows, muzzleloaders, and shotguns while in or around vehicles or on refuge roads (see 50 CFR 27.42). We define “unloaded” as: arrows or bolts removed from bow or crossbow; muzzleloader primer removed from nipple or powder removed from flashpan; or shotgun shell removed from chamber of shotgun. A muzzleloading firearm is considered "loaded" when the muzzleloader is capped, or has a charged pan, or has a primer or battery installed in the firearm. The definition of a "loaded crossbow" is a crossbow that is cocked and has either a bolt or arrow engaged or partially engaged on the shooting rail or track of the crossbow, or with a "trackless crossbow" when the crossbow is cocked and a bolt or arrow is nocked.

- We require hunters during archery-only seasons to sign in and out at the Hunter Sign-In/Sign-Out stations, and record deer harvest information on the Big Game Harvest Report (Service Form 3-2359).

**JUSTIFICATION:**

Hunting is a priority public use and is to receive enhanced consideration on refuges, according to the NWRSIA. Providing increased wildlife-dependent recreational opportunities at James River NWR promotes visitor appreciation and support for the refuge, Refuge System, and Service; engages communities in local habitat conservation efforts in the lower James River and the Chesapeake Bay; and instills a sense of ownership and stewardship ethic in refuge visitors.

Hunting, as described above, will not detract from the purpose and intent of the refuge. Stipulations described will ensure proper control over the use and provide management flexibility should detrimental impact develop. Allowing this use furthers the mission of the Refuge System and Service by expanding opportunities for wildlife dependent uses when compatible and consistent with sound fish and wildlife management. We have determined that hunting will not materially interfere with, or detract from, the fulfillment of the Refuge System mission or the purposes for which the refuge was established.

**SIGNATURE:**

Refuge Manager: _____ _____

(Signature) (Date)

**CONCURRENCE:**

Regional Chief: _____ _____

(Signature) (Date)

**MANDATORY 15 YEAR RE-EVALUATION DATE:** _____

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**FINDING OF APPROPRIATENESS OF A REFUGE USE**

Refuge Name: James River National Wildlife Refuge

Use: Research by Non-Service Personnel

This form is not required for wildlife-dependent recreational uses, 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? | ✓ | |
| (b) Does the use comply with applicable laws and regulations (Federal, State, tribal, and local)? | ✓ | |
| (c) Is the use consistent with applicable Executive orders and Department and Service policies? | ✓ | |
| (d) Is the use consistent with public safety? | ✓ | |
| (e) Is the use consistent with goals and objectives in an approved management plan or other document? | ✓ | |
| (f) Has an earlier documented analysis not denied the use or is this the first time the use has been proposed? | ✓ | |
| (g) Is the use manageable within available budget and staff? | ✓ | |
| (h) Will this be manageable in the future within existing resources? | ✓ | |
| (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? | ✓ | |
| (j) Can the use be accommodated without impairing existing wildlife-dependent recreational uses or reducing the potential to provide quality (see section 1.6D, 603 FW 1, for description), compatible, wildlife-dependent recreation into the future? | ✓ | |

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 ✓ 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** ✓

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.**

**FWS Form 3-2319**
**02/06**

## JUSTIFICATION FOR A FINDING OF APPROPRIATENESS OF A REFUGE USE

**Refuge Name:** James River National Wildlife Refuge

**Use:** Research by Non-Service Personnel

**NARRATIVE:**

In accordance with the 2006 U.S. Fish and Wildlife Service (Service) Appropriate Use Policy (603 FW 1), the refuge manager must first determine if the use is appropriate prior to allowing any non-priority public use on the refuge. Research conducted by non-Service personnel is not identified as a priority public use of the National Wildlife Refuge System (Refuge System) under the Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the Refuge System Improvement Act of 1997 (Public Law 105-57). However, research by non-Service personnel is often conducted by colleges and universities; Federal, State, and local agencies; nongovernmental organizations; and qualified members of the general public. Research on James River National Wildlife Refuge (NWR, the refuge) would further understanding of the natural environment and could be applied to the management of refuge wildlife. Research by others outside of the Service adds greatly to the information base refuge managers can draw from in order to make informed decisions.

All research proposals are evaluated for their benefits to the refuge and the Refuge System mission. The refuge manager will issue a special use permit for all approved research projects. All research permits require the principal investigator to provide summary reports of findings, copies of all raw data and resulting publications, and acknowledge the refuge for their participation. The refuge reserves the right at any time to find a specific request for a research project by non-Service personnel to be inappropriate or incompatible with the refuge's purposes, Service mission, or the refuge's conservation management goals and objectives established in the comprehensive conservation plan (CCP) and any step-down management plan, based on each individual review and assessment of each project's research details.

Not all research may be found appropriate. Some research may affect fish, wildlife, and plants in a manner neither consistent with refuge management plans nor compatible with refuge purposes or the Refuge System mission. Some research may interfere with or preclude refuge management activities, appropriate and compatible public uses, or other research. Some research may be appropriate off the refuge, but not on the refuge. For example, some natural and physical research may not be wildlife-dependent and may be accomplished successfully at locations off the refuge. Since not all research supports the establishing purposes of refuges or the Refuge System mission, we cannot define research as a refuge management activity. Therefore, we must evaluate each research proposal independently and may deny a request for a special use permit because we find the proposal to be inappropriate or incompatible.

Certain common research activities are evaluated explicitly in the compatibility determination. Any request for research would require issuance of a special use permit issued by the Service. At the time of request, a determination will be made by the refuge manager (or his or her designee) whether the research benefits the understanding of the natural environment and will contribute useful information to the Service and Refuge System. The entire refuge may be considered in a permit request for scientific research; however, an individual research project is usually focused on a particular habitat type, plant or wildlife species. On occasion, research projects will encompass an assemblage of habitat types, plants, or wildlife. The research location will be limited only to those areas of the refuge that are necessary to the research project.

The timing of the research will depend entirely on the individual research project's approved design. Scientific research may be allowed to occur on the refuge throughout the year. An individual research project could be short term in design, requiring one or two visits over the course of a few days. Other research projects could be multi-year studies that require daily visits to the study site. The timing of each individual research project will be limited to the minimum required to complete the project.

The methods of the research will depend entirely on the individual research project that is conducted. The methods of each research project will be scrutinized well before it will be allowed to occur on the refuge. No research project will be allowed to occur if it does not have an approved scientific method, causes considerable negative impacts on wildlife and habitat, or compromises public health and safety.

James River NWR is an unstaffed satellite refuge administered by the Eastern Virginia Rivers NWR Complex. No additional equipment, facilities, or improvements will be necessary to allow research by non-Service personnel. Staff time would be required to review research proposals and oversee permitted projects. Conducting these activities will require less than 10 percent of a work-year for one staff member.

Disturbance to wildlife and vegetation by researchers may occur through observation and accessing the study area by foot. Direct mortality may result as a byproduct of research activities. Overall, however, allowing well-designed and properly reviewed research to be conducted by non-Service personnel is likely to have negligible adverse impact on refuge wildlife populations. If the research project is conducted with professionalism and integrity, potential adverse impacts are likely to be outweighed by the knowledge gained about a species, habitat, or public use.

After evaluating research by non-Service personnel under Service policies, we conclude that the activity is appropriate as it contributes to and supports refuge management, purposes, and goals, and the mission of the Refuge System.

# COMPATIBILITY DETERMINATION

**USE:**

Research by Non-Service Personnel

**REFUGE NAME:**

James River National Wildlife Refuge

**ESTABLISHMENT DATE:**

March 27, 1991

**ESTABLISHING AND ACQUISITION AUTHORITIES:**

James River National Wildlife Refuge (NWR, refuge) was established on March 27, 1991 under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), as amended.

**PURPOSES FOR WHICH ESTABLISHED:**

The purpose for which James River NWR was established is: "…to conserve (A) fish or wildlife which are listed as endangered species or threatened species…or (B) plants…" (16 U.S.C. 1534 [Endangered Species Act of 1973]).

**NATIONAL WILDLIFE REFUGE SYSTEM MISSION:**

The mission of the National Wildlife Refuge System (Refuge System) is "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" (Refuge System Administration Act of 1966 [16 U.S.C. 668dd-668ee], as amended by the Refuge System Improvement Act of 1997 [NWRSIA][Public Law 105-57]).

**DESCRIPTION OF USE:**

**(a) What is the use? Is the use a priority public use?**
The use is research conducted by non-U.S. Fish and Wildlife Service (Service) personnel. This use includes research conducted by Federal, State, and private entities, such as the U.S. Geological Survey; State departments of natural resources; students and professors at State and private universities; and independent non-government researchers and contractors. Research activities will focus on priority species and habitats as identified in the refuge's approved comprehensive conservation plan (CCP) and other step-down plans or will address landscape-level questions. Acceptable research methods include bird banding, mist netting, point count surveys, radio-telemetry tracking, cameras, recorders, other passive traps.

Research conducted by non-Service personnel is not a priority public use of the Refuge System under the Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the NWRSIA. Although this use is not a priority public use, this activity would allow permitted researchers access to the refuge's natural environment to conduct both short-term and long-term research projects.

James River NWR has been open to research by non-Service personnel since 1994. Requests for special use permits for research will be considered on a case-by-case basis, as staff availability allows. In accordance

with 16 U.S.C. 668dd(d) and 50 C.F.R. Part 25, Subpart D, the refuge manager is responsible for reviewing applications for special use permits and determining whether to authorize a proposed use. Prior to being approved, the refuge manager must first find the use "appropriate," and then "compatible" with the refuge purposes and Refuge System mission.

The refuge manager will base the decision to issue a special use permit for research on his or her professional judgment and the value of the proposed research. The decision to allow a particular research project will also be consistent with Service regulations and policy, including the Policy on Maintaining the Biological Integrity, Diversity, and Environmental Health of the Refuge System (601 FW 3). The results of the research should result in better knowledge of our natural resources and improve methods to manage, monitor, and protect the refuge's biological resources and public uses.

The refuge manager will always have the discretion to deny or reevaluate the appropriateness and compatibility of any specific "research by non-Service personnel" request at any time [603 FW 2.1 H(1), (2)]. The refuge manager may deny a project based on his or her sound professional judgment based on field experiences, knowledge of the refuge's natural resources, particularly its biological resources, available scientific information, and after consulting with other experts, both inside and outside the Service.

When denying a request for a specific research project, the refuge manager will explain the rationale and conclusions supporting their decision in writing. The rationale for the denial will be consistent with the principles of sound fish and wildlife management, refuge administration, and applicable laws. The denial will generally be based on evidence that the details of a particular research project might: lead to the impairment of our conservation mission; detracts from fulfilling the refuge's purposes; conflicts with the conservation goals or objectives in an approved refuge management plans; is not manageable with the available budget or staff time; is inconsistent with public safety; or conflicts with maintaining or restoring the biological integrity, diversity, and environmental health of the refuge's priority habitats.

**(b) Where would the use be conducted?**
The location of the research will vary depending on the individual research project that is being conducted. The entire refuge may be considered in a permit request for scientific research; however, an individual research project is usually focused on a particular habitat type, plant or wildlife species. Occasionally, research projects will encompass an assemblage of habitat types, plants, or wildlife, or may span more than one refuge or include lands outside the Refuge System. The research location will also be limited only to those areas of the refuge that are necessary to conduct the research project. The refuge may limit areas available to research as necessary to ensure the protection of trust resources or reduce conflict with other compatible refuge uses. Access to study locations will be identified by refuge staff.

**(c) When would the use be conducted?**
The timing of the research will depend on the individual research project's approved design. Scientific research may be considered to occur on the refuge throughout the year, when there are no conflicts with protection of trust resources or primary public use activities. Special precautions will be required and enforced to ensure the researchers' health and safety and to minimize or eliminate potential conflicts with a priority public use.

An individual research project could be short term in design, requiring one or two visits over the course of a few days. Other research projects could be multiple year studies that require daily visits to the study site. The timing of each individual research project will be limited to the minimum required to complete the project.

**(d) How would the use be conducted?**
The methods of the research will depend entirely on the individual research project that is conducted. The methods of each research project will be reviewed and scrutinized before it will be allowed to occur on the refuge. No research project will be allowed to occur if:

- It does not have an approved research proposal.
- It negatively impacts endangered species, migratory birds, and other refuge trust resources.
- It compromises public health and safety.

A research application (Service Form 3-1383-R: National Wildlife Refuge System Research and Monitoring Special Use Application and Permit) and detailed research proposal that follows James River NWR study proposal guidelines (see attachment I) will be required from parties interested in conducting research on the refuge. Each request for this use will be considered, and if appropriate, will be issued a special use permit by the refuge manager. Each request will be evaluated on its own merit. The refuge manager will use sound professional judgment and ensure that the request will have no considerable negative impacts to natural, cultural, or visitor services, and does not violate refuge regulations. Special needs will be considered on a case-by-case basis and are subject to the refuge manager's approval. Any approved SUP will outline the framework in which the use can be conducted and refuge staff will ensure compliance with the permit. The SUP will provide any needed protection to individual refuge policies, mission, wildlife populations and natural habitats. In addition, all research projects require the primary investigator to submit written summary reports of all findings and acknowledge the refuge's participation.

Once approved, projects will be reviewed annually to ensure that they are meeting their intended purposes, reporting and communicating with refuge staff, and are fulfilling the mission of the Refuge System and purposes for which the refuge was established.

**(e) Why is this use being proposed?**

Research by non-Service personnel is conducted by colleges; universities; Federal, State, and local agencies; non-governmental organizations; and qualified members of the general public to further the understanding of the natural environment and to improve the management of the refuge's natural resources. Much of the information generated by the research is applicable to management on and near the refuge. In many cases, research by non-Service personnel ensures the perception of un-biased and objective information gathering which can be important when using the research to develop management recommendations for politically sensitive issues. Additionally, universities and other Federal partners can access equipment, resources, and facilities unavailable to refuge staff for analysis of data or biological samples.

The Service will encourage and support research and management studies on refuge lands that will improve and strengthen natural resource management decisions. The refuge manager will encourage and seek research relative to approved refuge objectives that clearly improves land management and promotes adaptive management. Priority research addresses information that will better manage the Nation's biological resources and is generally considered important to agencies of the Department of Interior, the Service, the Refuge System, and state fish and game agencies. Priority research also addresses important management issues or demonstrates techniques for management of species or habitats.

The refuge will also consider research for other purposes which may not be directly related to refuge-specific objectives, but contribute to the broader enhancement, protection, use, preservation, and management of native populations of fish, wildlife, and plants, and their natural diversity within the region or flyway. Prospective researchers or organizations can talk to refuge manager or biologist about specific research needs that will be defined in the step-down plans. Refuge support of research directly related to refuge objectives may take the form of funding, in-kind services such as housing or use of other facilities, direct staff assistance with the project in the form of data collection, provision of historical records, conducting management treatments, or other assistance as appropriate.

Research was first determined to be a compatible use on the refuge in 1994. The refuge manager renewed the determination that research is an appropriate use in 2006 and compatible use in 2007.

All research proposals are unique and require individual review and consideration. One example of research completed on the refuge that serves to illustrate the kind of research that may occur in the future is the landbird survey. This project is conducted by Service-authorized agents, and therefore classified as management activity not subject to compatibility review. However, it is an excellent example of the type of research we would consider to be appropriate and compatible. The landbird monitoring protocol is a standardized tool that has been adopted and approved by at least three different regions within the Service to monitor breeding landbirds. The protocol is used to monitor the abundance, density, occupancy, and species richness of breeding landbirds on national wildlife refuges through point count and vegetation surveys. Another objective of this monitoring is to assess how bird communities (composition, distribution, and abundance) respond to changes in landscape structure and vegetation. Development of this protocol was a direct response to the need identified in the Service's *Fulfilling the Promises* initiative as a high priority, second in importance after waterfowl data. This study has been conducted on James River NWR since 2009.

## AVAILABILITY OF RESOURCES:

The bulk of the cost for research is incurred in staff time to review research proposals, coordinate with researchers and write special use permits. In some cases, a research project may only require 1 day of staff time to write a special use permit. In other cases, a research project may take an accumulation of weeks, as the refuge biologist must coordinate with students and advisors and accompany researchers during site visits. Because research conducted on the refuge is not constant, there may be fiscal years when little if any time is spent on managing outside research projects by refuge staff. This support includes review of the proposal by the refuge manager and biologist, consultation and coordination with principal researcher and field staff, issuance of special use permit, review of progress reports and other daily operational communications (table B.5).

**Table B.5. Current Annual Administrative Costs Associated with Research by Non-Service Personnel.**

| Activities | Resource | Annual Duration | Rate[1] | Cost |
|---|---|---|---|---|
| Proposal review, coordination, and SUP preparation | Refuge Manager (GS-13) | 4 hours | $51 / hour | $204 |
| | Deputy Refuge Manager (GS-12) | 4 hours | $43 / hour | $172 |
| | Wildlife Biologist (GS-11) | 40 hours | $38 / hour | $1,520 |
| | Wildlife Refuge Specialist (GS-11) | 8 hours | $38 / hour | $304 |
| Field assistance, evaluating resource impacts | Wildlife Refuge Specialist (GS-11) | 10 hours | $38 / hour | $380 |
| | Wildlife Biologist (GS-11) | 160 hours | $38 / hour | $6,080 |
| Use of facilities | | 40 days | $5 / day | $200 |
| Use of equipment | Vehicle or watercraft | 4 days | $20 / day | $80 |
| **TOTAL** | | | | **$8,940** |

Note: Some actions and resulting costs also support approved public uses (i.e., hunt program).
[1] Maximum hourly rate in 2014 dollars, rounded to nearest dollar.

Based on existing refuge expenditures for habitat management, funding is adequate to ensure compatibility and to administer and manage the subject use.

## ANTICIPATED IMPACTS OF THE USE:

*Short-term Impacts*

Research activities may disturb fish and wildlife and their habitats. For example, the presence of researchers can cause bald eagles to flush from resting and feeding areas, cause disruption of birds on nests or breeding territories, or increase predation on nests and individual animals as predators follow human scent or trails. Efforts to capture animals, such as for migratory bird banding, can cause disturbance, injury, or death to groups of wildlife or to individuals. To wildlife, the energy cost of disturbance may be appreciable in terms of disruption of feeding, displacement from preferred habitat, and the added energy

expended to avoid disturbance.

Sampling activities associated with many types of research activities can cause compaction of soils and the trampling of vegetation. Installation of posts, equipment platforms, collection devices, and other research equipment in open water may present a hazard if said items are not adequately marked and/or removed at appropriate times or upon completion of the project. Research efforts may also discover methods that result in a reduction in impacts described above.

The potential for research conducted on the refuge to conflict with refuge management activities (e.g., pine thinning, prescribed burn) and visitor use on the refuge in minimal. Research would be scheduled to minimize conflict with refuge management activities. Generally, most research occurs within areas closed to other uses and away from public use trails and facilities. During hunting seasons, hunters may encounter researchers in the field, or observe monitoring plots or other research infrastructure. However, these encounters will be infrequent due to the typically minimal presence of field technicians and interest in maintaining low profile infrastructure to prevent disturbance or vandalism of study sites.

*Long-term impacts*
Long-term effects should generally be beneficial by gaining information valuable to refuge management. No long-term negative impacts are expected from the research activities described. The refuge manager can reduce the likelihood of long-term impacts by denying special use permits for research that is likely to cause long-term, adverse impacts. Also, permits for multi-year research projects are renewed annually, providing the opportunity for an analysis of any impacts before renewing the special use permit.

*Cumulative impacts*
Cumulative impacts would occur if multiple research projects were occurring on the same resources at the same time or if the duration of the research was excessive. In particular, the refuge must consider the potential impacts of non-Service research, in conjunction with any Service-sponsored research or management activity also taking place. However, no cumulative impacts are expected because the refuge manager can control the potential for cumulative impacts through special use permits, prohibiting multiple research projects from affecting any given area or species at one time. The refuge manager retains the option to deny proposals for research on that does not contribute to the mission of the Refuge System or causes undue disturbance or harm to refuge resources. The refuge manager also retains the right to revoke or deny renewal for any special use permit if unanticipated short-term, long-term, or cumulative impacts occur.

Project-specific stipulations outlined in each special use permit will act to minimize anticipated impacts of research projects. These stipulations will prevent impacts to refuge wetlands, water quality, soils, hydrology, fish, wildlife, habitat, or cultural resources. Projects which occur within the habitat of, or include direct monitoring of, threatened and endangered species will be subject to a Section 7 informal consultation with the Service's Virginia Field Office under the Endangered Species Act (87 Stat. 854, as amended; 16 U.S.C. 1531 et seq.). Only with the approval of the Section 7 consultation will the refuge permit research to be conducted on habitats or individuals of threatened and endangered species. Research that could adversely affect critical habitat or threatened and endangered wildlife will not be permitted.

**PUBLIC REVIEW AND COMMENT:**

As part of the comprehensive conservation plan (CCP) process for James River NWR, this compatibility determination will undergo a public review and comment period of 30 days following the release of the draft CCP and environmental assessment (EA).

**DETERMINATION (CHECK ONE BELOW):**

___ Use is not compatible

_X_ Use is compatible, with the following stipulations

**STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:**

- Prior to initiation of any research and/or management studies on the refuge, the requesting agency or organization is required to apply for a permit by submitting Service Form 3-1383-R: National Wildlife Refuge System Research and Monitoring Special Use Application and Permit (*http://www.fws.gov/forms/3-1383-R.pdf*; accessed May 2012) and a detailed research proposal that follows James River NWR study proposal guidelines (see attachment I) and Service Policy (Service Manual chapter 4, section 6).

- Researchers must give us at least 45 days to review proposals before the research begins. If the research involves the collection of wildlife, the refuge must be given 60 days to review the proposal. Researchers must obtain all necessary scientific collecting, banding, or other permits required by State and Federal entities before starting the research. Priority of approval will be based on studies that contribute to the enhancement, protection, use, preservation, and management of native wildlife populations and their habitat.

- The criteria for evaluating a research proposal, outlined in the "Description of Use" section above, will be used when determining whether a proposed study will be approved on the refuge. If proposed research methods are evaluated and determined to have potential adverse impacts on refuge wildlife or habitat, then the refuge would determine the utility and need of such research to conservation and management of refuge wildlife and habitat. If the need was demonstrated by the research permittee and accepted by the refuge, then measures to minimize potential impacts (e.g., reduce the numbers of researchers entering an area, restrict research in specified areas) would be developed and included as part of the study design and on the special use permit. Special use permits will contain specific terms and conditions that the researcher(s) must follow relative to activity, location, duration, and time-of-year restrictions to ensure continued compatibility. All refuge rules and regulations must be followed unless alternatives are otherwise accepted in writing by refuge management.

- Approved research/study proposals will be issued a SUP with appropriate restrictions to lessen disturbance to wildlife, identify restricted areas, and other limits as needed. The special use permit will also identify a schedule for annual progress reports and the submission of a final report or scientific paper.

- Any research involving ground disturbance may require historic preservation consultation with the Regional Historic Preservation Officer and/or State Historic Preservation Officer.

- Refuge staff may ask our regional refuge biologists, other Service divisions, State agencies, or academic experts to review and comment on proposals. Extremely sensitive wildlife habitat areas would be avoided unless sufficient protection from research activities (i.e., disturbance, collection, capture, and handling) is implemented to limit the area and/or wildlife potentially impacted by the

proposed research. Research activities will be modified to avoid harm to sensitive wildlife and habitat when unforeseen impacts arise.

- All research related special use permits will contain a statement regarding the Service's policy regarding disposition of biotic specimen. The current Service policy language in this regard is:

  *You may use specimens collected under this permit, any components of any specimens (including natural organisms, enzymes, genetic material or seeds), and research results derived from collected specimens for scientific or educational purposes only, and not for commercial purposes unless you have entered into a Cooperative Research and Development Agreement (CRADA) with us. We prohibit the sale of collected research specimens or other transfers to third parties. Breach of any of the terms of this permit will be grounds for revocation of this permit and denial of future permits. Furthermore, if you sell or otherwise transfer collected specimens, any components thereof, or any products or any research results developed from such specimens or their components without a CRADA, you will pay us a royalty rate of 20 percent of gross revenue from such sales. In addition to such royalty, we may seek other damages and injunctive relief against you (USFWS 1999).*

- Upon completion of a project, researchers are required to remove all research apparatus in the field.

- Any research project may be terminated at any time for non-compliance with the special use permit conditions. Research projects may also be modified, redesigned, relocated, or terminated at any time upon determination by the refuge manager that the project is causing unanticipated adverse impacts to wildlife, wildlife habitat, approved priority public uses, or other refuge management activities. Refuge staff will conduct annual reviews of the research project to monitor researcher activities for potential impacts to the refuge and for compliance with conditions on the special use permit. The refuge manager may terminate previously approved research and special use permits if adverse impacts are observed or if the researcher is not in compliance with the stated conditions.

- The Service expects researchers to submit a final report to the refuge upon completing their work. For long-term studies, we may also require interim progress reports. We also expect to receive copies of all raw data and publications that resulted from research on the refuge. All reports, presentations, posters, articles, or other publications will acknowledge the Refuge System and James River NWR as partners in the research.

**JUSTIFICATION:**

The Service encourages research on national wildlife refuges to collect new information which will improve the quality of refuge and other Service management decisions, to expand the body of scientific knowledge about fish and wildlife, their habitats, the use of these resources, appropriate resource management, and the environment in general, and to provide the opportunity for students and others to learn the principles of field research.

In accordance with 50 CFR 26.41, research conducted by non-Service personnel, as described in this compatibility determination, will not materially interfere with, or detract from, the fulfillment of the Refuge System mission or the purposes for which the refuge was established.

**SIGNATURE:**
Refuge Manager: _____ _____

(Signature) (Date)

**CONCURRENCE:**

Regional Chief: _____ _____

(Signature) (Date)

**MANDATORY 10 YEAR RE-EVALUATION DATE:** _____

**LITERATURE CITED:**

U.S. Fish and Wildlife Service (USFWS). 1999. Director's Order No. 109: Use of Specimens Collected on Fish and Wildlife Lands. March 30, 1999.

**ATTACHMENT I**

**James River National Wildlife Refuge Research Proposal Guidelines**

A research proposal including a justification and description of the work to be done on the refuge is required before approval of a special use permit. Below are the necessary requirements for a proposal to be considered. In addition, refuge staff reserve the right to ask more detailed questions before approving a project. Proposals should be submitted electronically as a Microsoft® Word® document or hard copy to the refuge manager.

*Cover Page*
The cover page must contain the following information:

- Title of proposal
- Current date
- Investigator(s)—name, title, organizational affiliation, address, telephone and fax numbers and e-mail address of all investigators or cooperators
- Proposed starting date
- Estimated completion date
- List of all partners and funding sources of the project
- Signatures of principal investigator(s) and other appropriate institutional officials

*Abstract*
The abstract should contain a short summary description of the proposed study, including reference to major points in the sections "Statement of Issue," "Objectives," and "Methods and Procedures."

*Statement of Issue*
Provide a clear precise summary of the problem to be addressed and the need for its solution. This section should include statements of the importance, justification, relevance, timeliness, ability to be generalized, and contribution of the study. Describe how any products will be used, including any anticipated commercial use. What is the estimated probability of success of accomplishing the objective(s) within the proposed timeframe?

*Objectives/Hypotheses*
A very specific indication of the proposed outcomes of the project should be stated as objectives or hypotheses to be tested. Project objectives should be measurable. Provide a brief summary of what information will be provided at the end of the study and how it will be used in relation to the problem. These statements should flow logically from the statement of issue and directly address the management problem.

Establish data quality objectives in terms of precision, accuracy, representativeness, completeness, and comparability as a means of describing how good the data need to be to meet the project's objectives.

*Study Area*
Provide a detailed description of the geographic area(s) to be studied and include a clear map delineating the proposed study area(s) and showing specific locations where work will occur.

*Methods and Procedures*
This section should describe as precisely as possible, how the objectives will be met or how the hypotheses will be tested. Include detailed descriptions and justifications of the field and laboratory methodology, protocols, and instrumentation. Explain how each variable to be measured directly addresses the research objective/hypothesis. Describe the experimental design, population, sample size, and sampling approach (including procedures for sub-sampling). Summarize the statistical and other data analysis procedures to be

used. List the response variables and tentative independent variables or covariates. Describe the experimental unit(s) for statistical analysis. Also include a detailed project time schedule that includes start, fieldwork, analysis, reporting, and completion dates.

*Quality Assurance/Quality Control*
Adequate quality assurance/quality control procedures help ensure that data and results are:

- Credible and not an artifact of sampling or recording errors.
- Of known quality.
- Able to stand up to external scientific scrutiny.
- Accompanied by detailed method documentation.

Describe the procedures to be used to ensure that data meet defined standards of quality and program requirements, errors are controlled in the field, laboratory, and office, and data are properly handled, documented, and archived. Describe the various steps (e.g., personnel training, calibration of equipment, data verification and validation) that will be used to identify and eliminate errors introduced during data collection (including observer bias), handling, and computer entry. Identify the percentage of data that will be checked at each step.

*Specimen Collections*
Clearly describe the kind (species), numbers, sizes, and locations of animals, plants, rocks, minerals, or other natural objects to be sampled, captured, or collected. Identify the reasons for collecting, the intended use of all the specimens to be collected, and the proposed disposition of collected specimens. For those specimens to be retained permanently as voucher specimens, identify the parties responsible for cataloging, preservation, and storage, as well as the proposed repository.

*Special Requirements, Permits, and Concerns*
Provide information on the following topics where applicable. Attach copies of any supporting documentation that will facilitate processing of your application.

*Refuge Assistance*
Describe any refuge assistance needed to complete the proposed study, such as use of equipment or facilities or assistance from refuge staff. It is important that all equipment, facilities, services, and logistical assistance expected to be provided by the Service be specifically identified in this section so all parties are in clear agreement before the study begins.

*Ground Disturbance*
Describe the type, location, area, depth, number, and distribution of expected ground-disturbing activities, such as soil pits, cores, or stakes. Describe plans for site restoration of significantly affected areas.

Proposals that entail ground disturbance may require an archaeological survey and special clearance prior to approval of the study. You can help reduce the extra time that may be required to process such a proposal by including identification of each ground disturbance area on a U.S. Geological Survey 7.5-minute topographic map.

*Site Marking and/or Animal Marking*
Identify the type, amount, color, size, and placement of any flagging, tags, or other markers needed for site or individual resource (e.g., trees) identification and location. Identify the length of time it is needed and who will be responsible for removing it. Identify the type, color, and placement of any tags placed on animals (see special use permit for stipulations on marking and handling of animals).

*Access to Study Sites*
Describe the proposed method and frequency of travel to and within the study site(s). Explain any need to enter restricted areas. Describe the duration, location, and number of participants, and approximate dates of site visits.

*Use of Mechanized and Other Equipment*
Describe any vehicles, boats, field equipment, markers, or supply caches by type, number, and location. You should explain the need to use these materials and how long they are to be left in the field.

*Safety*
Describe any known potentially hazardous activities, such as electro-fishing, scuba diving, whitewater boating, aircraft use, wilderness travel, and wildlife capture, handling, or immobilization.

*Chemical Use*
Identify chemicals and hazardous materials that you propose using within the refuge.

Indicate the purpose, method of application, and amount to be used. Describe plans for storage, transfer, and disposal of these materials and describe steps to remediate accidental releases into the environment. Attach copies of Material Safety Data Sheets.

*Animal Welfare*
If the study involves animals, describe your protocol for any capture, holding, marking, tagging, tissue sampling, or other handling of these animals (including the training and qualifications of personnel relevant to animal handling and care). If it is required that your institutional animal welfare committee review your proposal, please include a photocopy of their recommendations. Describe alternatives considered, and outline procedures to be used to alleviate pain or distress. Include contingency plans to be implemented in the event of accidental injury to or death of the animal. Include State and Federal permits. Where appropriate, coordinate with and inform State natural resource agencies.

*Specimen Collections*
Identify funding requirements for the cataloging, preservation, storage, and analyses of any collected specimens that will be permanently retained.

**Additional information or sections that may be requested for the proposal:**

*Literature Summary*
This section should include a thorough but concise literature review of current and past research that pertains to the proposed research, especially any pertinent research conducted at James River National Wildlife Refuge (NWR). A discussion of relevant legislation, policies, and refuge planning and management history, goals, and objectives should also be included.

*Literature Cited*
List all reports and publications cited in the proposal.

*Peer Review*
Provide the names, titles, addresses, and telephone numbers of individuals with subject-area expertise who have reviewed the research proposal. If the reviewers are associated with the investigator's research institution, or if the proposal was not reviewed, please provide the names, titles, addresses, and telephone numbers of three to five potential subject-area reviewers who are not associated with the investigator's institution. These individuals will be asked to provide reviews of the proposal, progress reports, and the draft final report.

*Budget*
The budget must reflect both funding and assistance that will be requested from the Service and the cooperator's contributions on an identified periodic (usually annual) basis.

*Personnel Costs*
Identify salary charges for principal investigator(s), research assistant(s), technician(s), clerical support, and others. Indicate period of involvement (hours or months) and pay rate charged for services. Be sure to include adequate time for data analysis and report writing and editing.

*Fringe Benefits*
Itemize fringe benefit rates and costs.

*Travel*
Provide separate estimates for fieldwork and meetings. Indicate number of trips, destinations, estimated miles of travel, mileage rate, air fares, days on travel, and daily lodging and meals charges. Vehicle mileage rate cannot exceed standard government mileage rates if Federal funds are to be used. Charges for lodging and meals are not to exceed the maximum daily rates set for the locality by the Federal government (contact James River NWR for appropriate rates).

*Equipment*
Itemize all equipment to be purchased or rented and provide a brief justification for each item costing more than $1,000. Be sure to include any computer-related costs. For proposals funded under a Service agreement or contract, the refuge reserves the right to transfer the title of purchased equipment with unit cost of $1,000 or more to the Federal government following completion of the study. These items should be included as deliverables.

*Supplies and Materials*
Purchases and rentals under $1,000 should be itemized as much as is reasonable.

*Subcontract or Consultant Charges*
All such work must be supported by a subcontractor's proposal also in accordance with these guidelines.

*Printing and Copying*
Include costs for preparing and printing the required number of copies of progress reports, the draft final report, and the final report. In general, a minimum of two copies of progress reports (usually due quarterly, semiannually, or as specified in agreement), the draft final report, and the final report are required.

*Indirect Charges*
Identify the indirect cost (overhead) rate and charges and the budget items to which the rate is applicable.

*Cooperator's Contributions*
Show any contributing share of direct or indirect costs, facilities, and equipment by the cooperating research institution.

*Outside Funding*
List any outside funding sources and amounts.

*Personnel and Qualifications*
List the personnel who will work on the project and indicate their qualifications, experience, and pertinent publications. Identify the responsibilities of each individual and the amount of time each will devote. A full vita or resume for each principal investigator and any consultants should be included here.

**Deliverables:**
All deliverables must be submitted to refuge staff no later than six months after the end of the project. Any extensions must be added as an amendment to the special use permit. Copies of publications that may extend outside of this six month period are still required as they become available. Interim deliverable timelines will be agreed on at the time of the issuing of the permit.

Deliverables that are required are as follows:

*Reports and Publications*

- Progress report(s) (usually quarterly, semiannually, or annually; may be required)
- Draft final and final report(s) (always required)

The refuge manager appreciates opportunities to review manuscripts in advance of their publication.

*Data Files*
Provide any spatial (Geographic Information Systems [GIS]) and non-spatial data files that is generated and submitted as part of the research. Non-spatial data must be entered onto CD-ROMs in Microsoft Access or Microsoft Excel. Spatial data, which includes Global Positioning System (GPS)-generated files, must be in a format compatible with the refuge's GIS system (ArcGIS 8 or 9, ArcView 3.3, or e00 format). All GIS data must be in UTM 19, NAD 83. A condition of the permit will be that the Service has access to and may utilize in future mapping and management all GIS information generated.

*Metadata*
For all non-spatial and spatial data sets or information products, documentation of information (metadata) describing the extent of data coverage and scale, the history of where, when, and why the data were collected, who collected the data, the methods used to collect, process, or modify/ transform the data, and a complete data dictionary must also be provided as final deliverables. Spatial metadata must conform to Service (FGDC) metadata standards.

*Specimens and Associated Project Documentation*
A report on collection activities, specimen disposition, and the data derived from collections must be submitted to the refuge following refuge guidelines.

*Other:*
Researchers must provide the refuge manager with all of the following:

- Copies of field notes/notebooks/datasheets.
- Copies of raw data (in digital format), including GIS data, as well as analyzed data.
- Copies of all photos (digital photos preferred), slides, videos, and films.
- Copies of any reports, theses, dissertations, publications or other material (such as news articles) resulting from studies conducted on refuge.
- Detailed protocols used in study.
- Aerial photographs.
- Maps/GIS data.
- Interpretive brochures and exhibits.
- Training sessions (where appropriate).

- Survey forms.
- Value-added software, software developed, and models.

Additional deliverables may be required of specific studies.

# COMPATIBILITY DETERMINATION

**USE:**

Wildlife Observation, Photography, Environmental Education, and Interpretation

**REFUGE NAME:**

James River National Wildlife Refuge

**ESTABLISHMENT DATE:**

March 27, 1991

**ESTABLISHING AND ACQUISITION AUTHORITIES:**

James River National Wildlife Refuge (NWR, refuge) was established on March 27, 1991 under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), as amended.

**PURPOSES FOR WHICH ESTABLISHED:**

The purpose for which James River NWR was established is: "…to conserve (A) fish or wildlife which are listed as endangered species or threatened species…or (B) plants…" (16 U.S.C. 1534 [Endangered Species Act of 1973]).

**NATIONAL WILDLIFE REFUGE SYSTEM MISSION:**

The mission of the National Wildlife Refuge System (Refuge System) is "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" (Refuge System Administration Act of 1966 [16 U.S.C. 668dd-668ee], as amended by the Refuge System Improvement Act of 1997 [NWRSIA][Public Law 105-57]).

**DESCRIPTION OF USE:**

**(a) What is the use? Is the use a priority public use?**
The uses are wildlife observation, photography, environmental education, and interpretation. The NWRSIA identified these uses as four of the six, priority, wildlife-dependent recreational uses to be facilitated in the Refuge System. The Act encourages the Service to provide opportunities for these uses when compatible with the purposes for which the refuge was established.

**(b) Where would the use be conducted?**
These four public uses are concentrated on approximately 240 acres, hereafter referred to as the designated public use area, of the 4,324-acre refuge (map 3.6 in the draft comprehensive conservation plan (CCP) and environmental assessment (EA)). The public use area is situated between Powell Creek and State Route 639. The public use area includes upland pine-dominated and moist hardwood forests, as well as lower elevation floodplain forests, freshwater marshes, and shrub swamps along Powell Creek.

These four public uses are conducted on designated refuge roads and trails within the public use area. These areas include, but are not limited to the existing 0.5 mile of trail extending from the refuge's information

kiosk to along the west bank of Powell Creek. Prior authorization from the Service is required for the hand-launching of canoes and kayaks on Powell Creek at the existing canoe/kayak launch.

As identified in the refuge's CCP, the following public use facilities modifications will enhance wildlife observation, photography, environmental education, and interpretation opportunities on the refuge:

- Extend the existing 0.5-mile nature trail to become a 3-mile trail, including segments that are American's With Disabilities Act-accessible and a pedestrian walkway that doubles as an observation platform along steep valleys.
- Improvements to the existing canoe/kayak launch on Powell Creek.
- Improvements to the existing vehicular ingress and egress route(s) and parking.
- Enhancement to the dike at Powell Creek to accommodate nature trail user access.
- Improvements to the existing restroom facility and renovate the existing check station main room to serve as a visitor contact station.
- Upgrade the equipment shed to accommodate outdoor meeting space for partners promoting Service mission-related topics.
- Improvements to interpretive waysides and brochures.
- Construction of a 3-person wildlife observation/photography blind.

**(c) When would the use be conducted?**
Currently, these four public uses may occur in the designated public use areas year-round from sunrise to sunset. If and when needed, time-of-year restrictions will be imposed on a case-by-case basis to ensure compliance with purposes for which the refuge was established and to prevent conflicts with other refuge public uses (e.g., hunting) or management activities (e.g., pine thinning).

Service and partner-sponsored public use programs will be scheduled on a case-by-case basis.

**(d) How would the use be conducted?**
Currently, visitors enter the refuge at public entry points by car along State Routes 10 and 639. Visitors traveling by car may park vehicles at refuge parking areas.

Upon access request and permit approval, visitors are informed of the allowed uses and how they should be conducted. Directional and informational signage is used to inform visitors about where and how to conduct these uses on the refuge. The information kiosk near Route 639 identifies the roads and trails open for travel and list authorized public uses.

In our draft CCP and EA, we propose that:

- Once infrastructure to support increased refuge visitation is constructed, improved, or enhanced, visitors in groups of 10 or less will no longer be required to obtain a general special use permit in advance of participating in wildlife observation, photography, environmental education, or interpretation within the refuge's designated public use area.
- Visitors traveling by car may park vehicles at designated refuge parking areas.

- The designated 3-mile trail will be described and interpreted in refuge brochures and on the refuge's Web site. Parking areas and kiosks would be located at refuge trailheads.

Contingent on available staffing and funding, the CCP also calls for expanding or enhancing these four priority public uses through a variety of methods including, but not limited to, the following:

- Develop the existing partnership with the National Park Service (NPS) for natural and cultural resource interpretation and protection along the Captain John Smith Chesapeake National Historic Trail.

- Coordinate with local schools and pursue partnerships (i.e., Prince George County Parks and Recreation Department) to establish regular visitation and introduce community youth to the natural resources within their county through environmental education and interpretive programs.

- Offer two interpretive boat tours annually, specifically to observe bald eagles.

- Create a program to showcase the refuge as a demonstration area for forest management.

- Expand existing partnership with Richmond Audubon Society and Virginia Master Naturalist groups to include seasonal public wildlife observation and nature photography tours.

- Explore environmental education opportunities at the refuge with the James River Association.

Individuals or Small Groups
Wildlife observation, photography, environmental education, and interpretive experiences occur on an individual or group basis. To accommodate other users and promote a positive wildlife observation experience, we encourage smaller group sizes (i.e., less than 10 members). The refuge will not require advanced notice to request a general SUP for individuals or groups of less than 10 members interested in using the designated public use areas for wildlife observation, photography, environmental education, or interpretation.

Large Groups
Groups larger than 10 persons must contact the refuge office no less than 5 business days prior to the date proposed for visiting the trail system so that the refuge can determine if the group can be accommodated. A general SUP may be required. The general SUP application will be mailed, emailed, or faxed to the applicant upon request. The Refuge Manager, or his designee, will evaluate the general SUP application and determine if a permit will be issued. If approved, the applicant will be sent an approved general SUP and informed that the applicant must have a copy of the permit in his/her possession while visiting the refuge. If a permit application is denied, the applicant will be informed of the basis for permit denial.

A general SUP is not required for individuals participating in Service- or partner-sponsored programs that are advertised in local publications and on the refuge Web site (*http://www.fws.gov/refuge/james_river*). Participation instructions are included in these announcements.

Participation by visitors in partner-sponsored events or programs does not require a general SUP if the partner organization has been issued a general SUP for the event or program because program sponsors request a general SUP on behalf of program participants. A general SUP may be issued to an individual; a group (e.g., birding club, Virginia Master Naturalists); or a formally recognized Service partner organization or agency (e.g., Richmond Audubon Society, James River Association [JRA], NPS, ) sponsoring a wildlife-dependent recreational use program. For example, the JRA is a formally-recognized Service partner organization that has been granted a general special use permit to conduct an environmental education program for student groups at James River NWR on a recurring basis.

Refuge staff and partners communicate directly with visitors in advance of or during their visit. Maps, brochures, and trail information is provided to the participating visitor or made available by other means (e.g., trail kiosks, refuge Web site).

*The James River Ecology School*

In December 2007, the Service signed a 20-year Memorandum of Understanding (MOU) with the JRA to develop the James River Ecology School (the Ecology School) at Presquile NWR and James River NWR. The Ecology School programming is designed to provide meaningful outdoor experiences that connect people with nature, is focused on the Chesapeake Bay and James River watershed, and is consistent with Virginia Standards of Learning requirements. The bulk of visitors, students, and youth groups participating in the Ecology School will be visiting Presquile NWR, a 1,329-acre island refuge located a upriver from James River NWR; however, some Ecology School programming may occur at James River NWR.

*Service and NPS Collaboration in the Chesapeake Bay Watershed*

In October 2010, the Service and NPS signed a MOU regarding cooperation and collaboration on a variety of efforts within the Chesapeake Bay Watershed. Among these efforts is implementation of the Captain John Smith Chesapeake National Historic Trail (NHT), America's first water-based national historic trail. The water trail, more than 3,000 miles long, follows the routes of Captain John Smith's exploration of the Chesapeake Bay and its tributaries in 1607-1609. Through recreational experiences on water and land, knowledge about American Indian societies and cultures of the 17th century is shared and the natural history of the Chesapeake Bay and tributaries are interpreted.

During 2011, the Service actively participated in the planning process for implementing the Captain John Smith Chesapeake NHT on the James River. Through continued collaboration, the Service and NPS will ensure that Captain John Smith Chesapeake NHT-related activities proposed to occur at James River NWR are implemented in a manner that is compatible with the purpose and intent of the refuge.

**(e) Why is the use being proposed?**

The NWRSIA identifies these four uses as priority public uses that, if compatible, are to receive enhanced consideration over other general public uses. Offering all four of these priority public uses at James River NWR will facilitate public enjoyment of and advocacy for the refuge, the Refuge System, and the Service mission. Of these four uses, James River NWR was opened to environmental education in the early 1990s and no unacceptable impacts to the refuge have been observed to date. In the draft CCP and EA, we propose to enhance the existing wildlife observation, photography, environmental education, and interpretation programs.

These uses will provide opportunities for visitors to observe and learn about wildlife and wild lands in both structured and unstructured environments, and observe wildlife in their natural habitats. These four priority uses provide visitors with opportunities to enjoy refuge resources and gain a better understanding and appreciation of fish and wildlife, wild lands ecology, the relationships of plant and animal populations in an ecosystem, and wildlife management. These activities will enhance public understanding of natural resource management programs and ecological concepts, enable the public to better understand the problems facing native wildlife and wild lands resources, help visitors better understand how they affect wildlife and other natural resources, and demonstrate the Service's role in conservation and restoration.

Photographers will gain opportunities to photograph wildlife in its natural habitat. These opportunities will increase the publicity and advocacy of Service programs. Photography provides wholesome, safe, outdoor recreation in a scenic setting, and entices those who come strictly for recreational enjoyment to participate in the educational facets of our public use program and become advocates for the refuge and the Service.

Visitors need a way to access these priority uses. By allowing visitors to walk, hike, drive, paddle, and boat in designated areas of the refuge, we are providing access to these important priority public uses with minimal impacts to sensitive wildlife and habitat.

## AVAILABILITY OF RESOURCES:

The financial and staff resources necessary to provide and administer these uses at their current levels are now available. We expect the existing financial resources to continue in the future, subject to availability of appropriated funds. Recommendations detailed in the CCP and Visitor Services step-down plan would identify strategies for implementation.

Current annual administrative costs associated with the existing refuge-supported operations for wildlife observation, photography, environmental education, and interpretation programming are small due to the limited scope of use. The largest costs would be associated with new trail construction, kiosks, and canoe/kayak launch. These capital costs are described in appendix D of the draft CCP and EA.

Staff time associated with administration and regulatory enforcement of this use is related to assessing the need for road and trail maintenance and repair, maintaining kiosks, maintaining gates, maintaining traffic counters and recording collected data, maintaining sign-posting of roads and trails, informing the public about new refuge uses, conducting visitor use surveys, analyzing visitor use patterns, monitoring the effects of public uses on refuge resources and visitors, and providing information to the public about the use.

Funding for visitor improvements comes from a variety of sources including general management capability funds, visitor facility enhancement projects, grant funds, contributions, and special project funds. We will complete and maintain projects and facilities as funds become available, and use volunteers and partners to help in construction and maintenance when appropriate.

Once a visitor services plan is completed and support infrastructure erected, cost for administering the wildlife observation, photography, environmental education and interpretive program will be easier to assess.

## ANTICIPATED IMPACTS OF THE USE:

*Background*

Currently, James River NWR operates their biological and visitor services programs under interim goals and objectives derived from the language in the 1989 environmental assessment proposing refuge establishment, 1991 refuge management plan, subsequent habitat management plans, and the NWRSIA. Until the refuge's CCP is completed, these interim goals and objectives provide the context for making management decisions affecting both the biological and visitor services programs. Reevaluation of goals and objectives is one of the early steps in the development of a refuge CCP. James River NWR initiated its CCP development process in January 2007 but experienced some delay until reinitiating the planning process in January 2012. Once the CCP is approved, this compatibility determination will be revised, updated, or amended, as warranted, to be consistent with the decisions made in that plan.

Specific refuge objectives stated in the 1989 environmental assessment proposing refuge establishment:

- To preserve, restore, and enhance in their natural ecosystems all species of animals and plants that are endangered or threatened with becoming endangered on lands of the Refuge System.
- To perpetuate the migratory bird resource for the benefit of people.
- To preserve the natural diversity and abundance of mammals and nonmigratory birds on refuge lands.

- To provide understanding and appreciation of fish and wildlife ecology and man's role in his environment, and to provide visitors with high-quality, safe, wholesome, and enjoyable recreational experiences oriented toward wildlife.

New information about the refuge's contributions toward populations of several bird species of conservation concern has been acquired since 2002 and has influenced implementation of the public use program. During the Lower James River Important Bird Area designation process, we learned that James River NWR contributes significantly to several bird species of conservation concern, including breeding prothonotary warblers, nesting and roosting bald eagles (listed as state threatened), breeding black ducks, ground nesting birds, and wild turkey (National Audubon Society 2007). Bald eagle nest productivity flights conducted by the Center for Conservation Biology (CCB) revealed a high concentration of wintering and nesting bald eagles in the area (Watts and Byrd 2010).

Additionally, the public use program on the refuge is affected by Servvice policy to ensure that the biological integrity, diversity, and environmental health (BIDEH) of the Refuge System are maintained for the benefit of present and future generations of Americans. The Service policy on BIDEH (601 FW 3) provides for the consideration and protection of the broad spectrum of fish, wildlife, and habitat resources found on national wildlife refuges and associated ecosystems. As a result, the CCP may also include new objectives to protect non-avian wildlife and their habitats, including State-listed reptiles (e.g., spotted turtle, box turtle, and hog-nosed snake), amphibians, and pollinators. All refuge-specific goals, objectives, and strategies will be developed within the context of the refuge's establishing purpose, anticipated effects of climate change, and using the strategic habitat conservation approach.

In an effort to consider and protect the broad spectrum of fish, wildlife, and habitats present at James River NWR, adverse impacts to the refuge's BIDEH will be avoided or minimized when implementing public use programs by establishing stipulations that control the use context, intensity, and duration.

*Soils and Vegetation*

In the short-term, minor impacts to forest and the freshwater marsh and shrub swamp vegetation would be primarily associated with the use of heavy equipment to remove trees for the construction of 2.5 miles of new trail segments, establishment of four parking areas, and installation of interpretive signage in the designated public use area (map 3.6 in the draft CCP and EA). In the long-term, impacts on vegetation would decrease as the vegetation adjacent to these areas recovers from the temporary use and presence of equipment. Through site planning and interpretive messaging, we would minimize the potential for impacts to refuge vegetation beyond the designated public use area including parking lots and nature trail.

Refuge visitors will be concentrated within the designated public use area (i.e., trail network and lawn areas adjacent to buildings). As a result of their activities, visitors are likely to generate noise, trample vegetation, and occupy buildings with windows and lighting. Wildlife habitat in the vicinity may be impacted.

Visitor use in the uplands occurs in forested areas with leaf litter ground cover, which is able to withstand high foot-traffic. Increased public use activity on the refuge would result in negligible, direct, long-term impacts to soils adjacent to designed public use areas such as trails and parking areas. In steep areas and those adjacent to water and wetlands, best management practices will be utilized to minimize impacts. Boardwalks will be used in areas of potential erosion concerns and moist soil sites. We would minimize impacts by installing interpretive signs that require users to stay on the designated paths and trails and explain the reasons why.

Increased foot traffic and construction equipment are the primary sources for introduction of non-native, invasive plant species. Infrequent and short-duration foot traffic has been shown to result in substantial loss of plant cover and species diversity, in some cases as much as more frequent traffic over a longer period of time (Kuss and Hall 1991) and loss of organic soil (Cole and Marion 1988). Some salamander species, such as the eastern redback salamander (*Plethodon cinereus*), will not cross openings that are too wide, dry,

graveled, or bare ground (Marsh et al. 2005).

*Wildlife*
Bald eagles, other raptors, ground nesting, and breeding and migratory songbirds use the forested habitat of the refuge for nesting, roosting, and foraging. Public access to trails, hunts, and education programs on the refuge would result in negligible short-term indirect impacts to nesting, foraging, or breeding birds. Pedestrian activity has been shown to be the most disturbing activity to nesting and foraging bald eagles (Grubb and King 1991). Noise and motion near nesting or roosting sites may cause wildlife to flush and expend energy otherwise needed for reproductive success or overwintering survival (Burger 1981, Klein 1989). Existing and proposed trails and public access points are located in discrete locations.

Human disturbance would potentially cause mammals to flee. Similar to birds, mammals can flee in response to human disturbance (Knight and Cole 1991). Females with young are more likely to flee from disturbance than those without young (Hammitt and Cole 1998). We would minimize impacts to mammals by requiring visitors to stay on trails (Miller et al. 2001) and to stay out of sensitive areas.

External lighting fixtures and light from internal sources can disorient birds and amphibians and fatally attract pollinators (Brown et al. 2007, Buchanan 2002, Frank 1988, Frank 2002). Night programming on the refuge will be rare and be sensitive to these concerns. Large glass windows that reflect habitat or look deceptively like open sky kill millions of birds each year in the United States, especially during night migration and near stopover sites (Brown et al. 2007). Refuge buildings are one-story in height and use non-reflective or patterned glass to reduce the chance of bird strikes.

Anticipated direct, indirect, and cumulative impacts to endangered species, threatened species, and other special status species of the refuge are described below. The refuge requested Section 7 informal consultation with the Service's Virginia Field Office under the Endangered Species Act (16 U.S.C. 1536) on all the actions in alternative B of the draft CCP and EA for James River NWR that could potentially impact listed species. This process resulted in a finding that our proposed actions are not likely to adversely affect the listed species or their associated habitats on the refuge. Other, non-game special status species are not expected to be impacted by hunting at James River NWR. We are working with our Virginia Ecological Services Field Office to conduct an intra-Service section 7 consultation to ensure compliance with the Endangered Species Act (16 U.S.C. 1536) on all actions in this draft CCP and EA.

The bald eagle continues to be protected federally under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The Bald and Golden Eagle Protection Act, originally passed in 1940, provides for the protection of the bald eagle and the golden eagle (as amended in 1962) by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 U.S.C. 668(a); 50 CFR 22). Bald eagles (*Haliaeetus leucocephalus*) are known to nest, roost, and winter at James River NWR. Since the refuge was opened to any public use, we have imposed geographic and time-of-year restrictions on the public use activities to protect nesting bald eagles. We would continue to provide direct, moderate, long-term beneficial impacts to bald eagle nesting areas by managing visitor access in accordance with BGEPA requirements. Within 330 feet of known nesting sites, we would continue to limit access between December 15 and July 15 (VDGIF and USFWS 2000) to minimize disturbance during incubation and other nesting activities that could reduce recruitment rates. We would continue to manage public use activities in accordance with Federal laws and regulations.

*Public Access and Use*
Our increased and improved environmental education and interpretation of the refuge's birds and their habitat requirements would provide negligible, direct, long-term impacts by helping to increase public understanding of and appreciation for bald eagles, as well as waterfowl and waterbirds. Providing up to two refuge-sponsored trips for approximately 60 people annually to observe bald eagles perching, foraging, and nesting on the refuge would also offer opportunities to observe and learn more about waterfowl and

waterbirds in the vicinity.

Increased public access to trails and wildlife drive for wildlife observation, photography, environmental education, and interpretation would result in negligible to minor, indirect, short-term impacts as knowledge and appreciation of mammalian species and their habitats is fostered.

With limited Service resources available for additional monitoring of birds and their habitats, partnerships would provide moderate, indirect, long-term impacts as it will help to supplement our information needs. University research partnerships and education programs would provide minor direct long-term impacts by helping to increase knowledge about and awareness of different bird groups using the refuge, including ground nesting birds, cavity nesting birds, raptors, neotropical migratory birds, waterfowl, marsh birds, and bald eagles.

**PUBLIC REVIEW AND COMMENT:**

As part of the CCP process for James River NWR, this compatibility determination will undergo a public review and comment period of 30 days following the release of the draft CCP and EA.

**DETERMINATION (CHECK ONE BELOW):**

___ Use is not compatible

_X_ Use is compatible, with the following stipulations

**STIPULATIONS NECESSARY TO ENSURE COMPATIBILITY:**

James River NWR has developed a list of criteria for determining whether any given refuge location would be appropriate for wildlife observation, photography, environmental education, or interpretation. These criteria would apply to current and future programs, trails, and facilities, and are in addition to the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Criteria are as follows:

Locations for wildlife-dependent public uses should:

- Provide an opportunity to view a variety of habitats and wildlife.
- Be safe for the access proposed at current use levels and proposed future use levels.
- Require minimal annual maintenance to ensure safe access and prevent habitat degradation.
- Have a low potential for fragmenting habitat or disturbing wildlife populations.
- Occur where less than 50 percent of the trail system's length occupies soil types rated as high or very high for compaction and/or erosiveness.
- Predominately occupy previously modified substrate (graveled, cultivated, or filled), such as old roads and former logging corridors.

Additional stipulations to ensure compatibility include:

- James River NWR regulations will be posted and enforced. Closed areas will be established as needed, posted, and enforced. Signs necessary for visitor information, directions, and safety will be kept current.
- Walking and hiking on designated trails solely for the purpose of wildlife observation, photography, environmental education, interpretation, and accessing to designated fishing locations is only compatible on designated trails.
- Biking on the refuge is only compatible when visitors are using Route 639 to arrive at or leave the information kiosk on Route 639. The area of compatible bike use is less than 400 linear feet.
- Driving on refuge roads within the public use area is only compatible along very limited designated routes.
- Prior to trail expansion and improvements to infrastructure to support increased visitation, refuge access permits will continue to be required in advance of visit.
- Access for canoes, kayaks, and non-trailered, hand-launched boats with small electric motors to access Powell Creek from the refuge is only compatible when using designated public use facilities on the refuge (i.e., public canoe/kayak launch on Powell Creek).
- To promote public safety, accommodate other users, and reduce wildlife disturbance, groups of 10 or more persons must apply for and be issued a general SUP. Visitor group sizes and visitation frequency will be limited during sensitive time periods for wildlife or in sensitive locations (i.e., wetlands).
- Refuge- or partner-sponsored events and programming may require preregistration.
- No activities will be allowed that may adversely impact any federally threatened or endangered species. The known presence of a threatened or endangered species will preclude any new use of an area until the Refuge Manager determines otherwise.
- Public use areas and facilities will be maintained in good, working, and safe condition. Regularly used roads, trails, landings are largely distanced from sensitive habitats, migration corridors, and transition zones between adjacent habitats. If necessary, portions of trails may be closed or traffic rerouted away from hibernacula, wetlands, nesting sites, seeps, ravines, and coves.
- We will evaluate sites and programs as needed to assess whether objectives are being met and to prevent site degradation. If evidence of unacceptable adverse impacts appears, the location(s) of activities will be rotated with secondary sites, curtailed, or discontinued.
- Best management practices will be used to avoid introductions of non-native, invasive plant species.
- The Service limits human disturbance of wildlife in the eagle concentration areas. Adherence to the guidelines and raising awareness about eagle protection and recovery on the James River are high priorities for this refuge.

**JUSTIFICATION:**

Wildlife observation, photography, environmental education, and interpretation are all priority public uses and are to receive enhanced consideration on refuges, according to the NWRSIA. Providing increased wildlife-dependent recreational opportunities at James River NWR promotes visitor appreciation and support for the refuge, Refuge System, and Service; engages communities in local habitat conservation efforts in the lower James River and the Chesapeake Bay; and instills a sense of ownership and stewardship ethic in refuge visitors.

Wildlife observation, photography, environmental education, and interpretation, as described above, will not detract from the purpose and intent of the refuge. Stipulations described will ensure proper control over the use and provide management flexibility should detrimental impacts develop. Allowing this use furthers the mission of the Refuge System and Service by expanding opportunities for wildlife dependent uses when compatible and consistent with sound fish and wildlife management. We have determined that wildlife observation, photography, environmental education, and interpretation will not materially interfere with, or detract from, the fulfillment of the Refuge System mission or the purposes for which the refuge was established.

**SIGNATURE:**

Refuge Manager: _____ _____

(Signature) (Date)

**CONCURRENCE:**

Regional Chief: _____ _____

(Signature) (Date)

**MANDATORY 15 YEAR RE-EVALUATION DATE:** _____

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