

Appendix A



View from opening on Wapack Trail
Lelaina Marin/USFWS

Findings of Appropriateness and Compatibility Determinations

■ Findings of Appropriateness

- ✦ Walking/Hiking, Backpacking, Cross Country Skiing, Snowshoeing
- ✦ Dog Walking
- ✦ Berry Picking
- ✦ Research by Non-Service Personnel
- ✦ Camping
- ✦ Mountain Biking
- ✦ Horseback Riding
- ✦ Organized or Facility-supported Picnicking
- ✦ Jogging

■ Compatibility Determinations

- ✦ Wildlife Observation and Photography and Environmental Education and Interpretation
- ✦ Walking/Hiking, Backpacking, Cross Country Skiing, Snowshoeing
- ✦ Dog Walking
- ✦ Berry Picking
- ✦ Research Conducted by Non-Service Personnel

Finding of Appropriateness of a Refuge Use

Refuge Name: Wapack National Wildlife Refuge

Use: Walking/Hiking, Backpacking, Cross Country Skiing, Snowshoeing

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

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

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

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

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

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

Not Appropriate ___ **Appropriate** X

Refuge Manager: _____ Date: _____

If found to be Not Appropriate, the refuge supervisor does not need to sign concurrence if the use is a new use.

If an existing use is found Not Appropriate outside the CCP process, the refuge supervisor must sign concurrence.

If found to be Appropriate, the refuge supervisor must sign concurrence:

Refuge Supervisor: _____ Date: _____

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

Justification for a Finding of Appropriateness of a Refuge Use

Refuge Name: Wapack National Wildlife Refuge

Use: Walking/Hiking, Backpacking, Cross Country Skiing, Snowshoeing

Narrative

This use is appropriate as it allows refuge visitors the least impacting mode of transportation to participate in wildlife observation, photography and environmental education.

Visitors are required to remain on the designated trail system to minimize environmental damage and prevent accidents. Collecting of any kind is not allowed, nor is disturbing or feeding wildlife. Trails are monitored and maintained by the Friends of the Wapack and the Mountain View Hiking Club to provide a safe and quality visitor experience. The trail surfaces are maintained each year as necessary.

The presence of people walking, hiking, backpacking, skiing, and snowshoeing could result in some disturbance to wildlife located in habitats adjacent to the trail system. However, this disturbance should only be short term. The use of the trails could lead to soil compaction causing some tree roots to be exposed if they are close to the ground surface. Markers and refuge boundary signs encourage trail users to stay on the trail to minimize effects on surrounding vegetation. Other impacts in violation of refuge regulations such as littering or illegal take of wildlife could occur. Refuge staff believe that with the proper management, walking, hiking, backpacking, skiing, and snowshoeing will not result in any short- or long-term impacts that will adversely affect the purpose of the refuge or the mission of the National Wildlife Refuge System.

These are existing and longstanding uses on Wapack and most national wildlife refuges. This use allows refuge visitors to participate in priority public uses on a national wildlife refuge. This use may lead to a better understanding of the importance of the Refuge System to the American people and to their support for refuge acquisition and management.

The Service and the National Wildlife Refuge System maintain goals of providing opportunities to view wildlife. Allowing the use of the trail system by persons engaging in walking, hiking, backpacking, cross country skiing, and snowshoeing will provide visitors the chance to view wildlife. This activity promotes an appreciation for the continued conservation and protection of wildlife and habitat. Walking, hiking, backpacking, cross country skiing, and snowshoeing would not materially interfere with or detract from the mission of the National Wildlife Refuge System or the purposes for which the refuge was established.

Finding of Appropriateness of a Refuge Use

Refuge Name: Wapack National Wildlife Refuge

Use: Dog Walking

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

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

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 X

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

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

Not Appropriate ___ **Appropriate** X

Refuge Manager: _____ Date: _____

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

If found to be Appropriate, the refuge supervisor must sign concurrence:

Refuge Supervisor: _____ Date: _____

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

Justification for a Finding of Appropriateness of a Refuge Use

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Refuge Name: Wapack National Wildlife Refuge

Use: Dog Walking

Narrative

Dog walking will be allowed throughout the 4-mile segment of the Wapack Trail that cuts through the refuge, the 1.1-mile Cliff Trail, and the 3-mile section of Ted's and Carolyn's trail that traverses the refuge. The refuge trail is open daily, year-round, from half an hour before sunrise to half an hour after sunset, unless a conflict with a trail maintenance activity or an extenuating circumstance necessitates our deviating from those procedures. Examples are closures for snow and ice storms or other events affecting human safety.

We have never formally evaluated dog walking on this refuge, and therefore, technically, it has been prohibited on refuge lands. This has created confusion for visitors since The Nature Conservancy and Miller State Park, whose lands adjoin the refuge, both allow dog walking on leash on their sections of the Wapack Trail. Since there is demand for this use on the refuge and visitors can participate in wildlife-dependent recreation while walking a dog on a leash, we reevaluated our existing policy on dog walking to better meet the needs of our public while minimizing wildlife disturbances.

Our new policy would permit dog walking on the refuge provided that they are kept on a leash and under direct control of their owner at all times. Owners would be required to clean up after their dogs. We would strictly enforce these new policies to minimize wildlife and visitor disturbance. With our volunteers and partners, we would monitor dog walking over the next 5 years to determine if visitors are adhering to the policies. If we find that the majority of dog walkers are not complying, we would be prepared to prohibit dog walking altogether.

We would print the availability of dog walking as an activity on the refuge as well as the rules and consequence of violating the new policies on the new orientation sign. Working with partners (i.e. New Hampshire Parks and Recreation), we would develop a sign at the northern end of Miller State Park that would explain the detrimental effects of letting a dog off leash.

Finding of Appropriateness of a Refuge Use

Refuge Name: Wapack National Wildlife Refuge

Use: Berry Picking

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

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

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

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

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

Not Appropriate ___ **Appropriate** X

Refuge Manager: _____ Date: _____

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

If found to be Appropriate, the refuge supervisor must sign concurrence:

Refuge Supervisor: _____ Date: _____

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

Justification for a Finding of Appropriateness of a Refuge Use

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Refuge Name: Wapack National Wildlife Refuge

Use: Berry Picking

Narrative

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

Individuals seeking berries will be allowed to enter the trail and hand pick the fruit for personal consumption. The anticipated level of use is very low and it is not anticipated that it will be necessary to set any limit on the number of pickers allowed. Berry picking will be allowed only during daylight hours and use of rakes will be prohibited. Pickers will be limited to collecting only enough for personal or family consumption. Commercial picking will not be permitted. Berry picking has been a historic and traditional use and is known to have occurred in the area for many years.

Impacts such as trampling vegetation and temporarily disturbing wildlife would occur, but is not anticipated to be significant. Visitors walking off established trails to collect berries may impact plants indirectly by compacting soils and walking on young plants and reducing survival and regeneration. It is anticipated, however, that under current levels of use on the refuge or with the expected 15 percent increase in visitation, the incidence of these problems will be minor and insignificant. Many of the berry bushes are located right next to the trail, alleviating the need for a lot of traffic off the trail. As the forest habitat continues to mature, small openings containing berry bushes are being replaced by mature trees, thus reducing the number of berry bushes found on the refuge.

Wildlife may avoid using otherwise suitable habitat when temporarily disturbed by visitors. Again, it is anticipated that under current levels of use on the refuge or with the expected 15 percent increase in visitation, the incidence of this will be minor and insignificant.

It is generally held that the harvest of berries by people in a wild, difficult to access environment such as the refuge is not sufficiently efficient or so extensive so as to negatively impact the use and availability of the overall berry crop by wildlife.

Berry picking will be permitted only in designated trail areas to minimize the damage to vegetation by trampling. Portions of the berry picking area or, if appropriate, the entire area can be closed at any time for any length of time if the Refuge Manager determines that wildlife or wildlife habitat is being impacted by the activity.

With the above-mentioned consideration, berry picking on Wapack National Wildlife Refuge is considered appropriate. Berry picking has been a historical and traditional use of the refuge for the many years and this use is generally declining as berry bushes are being replaced by other shade tolerant vegetation in the forest understory. No adverse impacts from the activity are known or documented at this refuge.

Finding of Appropriateness of a Refuge Use

Refuge Name: Wapack National Wildlife Refuge

Use: Research by Non-Service Personnel

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

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

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

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

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

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

Not Appropriate ___ **Appropriate** X

Refuge Manager: _____ Date: _____

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

If found to be Appropriate, the refuge supervisor must sign concurrence:

Refuge Supervisor: _____ Date: _____

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

Justification for a Finding of Appropriateness of a Refuge Use

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Refuge Name: Wapack National Wildlife Refuge

Use: Research by Non-Service Personnel

Narrative

Research conducted by non-Service personnel is not identified as a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997. This use is not a priority public use of the Refuge System. However, research by non-Service personnel is often conducted by colleges, universities, Federal, State, and local agencies, non-governmental organizations, and qualified members of the general public. Research on Wapack NWR would further the understanding of the natural environment and could be applied to management of the refuge's wildlife.

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 refuge staff whether the research benefits the understanding of the natural environment and will contribute useful information to the Service and National Wildlife Refuge System. The entire refuge may be open and available for scientific research. An individual research project is usually limited to 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 to those areas of the refuge that are absolutely necessary to conduct of the research project.

The timing of the research will depend entirely on the individual research project's approved design. Scientific research would 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 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.

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, negatively impacts upland birds and wintering raptors, or compromises public health and safety.

Wapack Refuge is an unstaffed satellite refuge administered by Great Bay NWR. 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. We expect that conducting these activities will require less than one-tenth of a work-year for one staff member.

The Service encourages approved research to further the understanding of the natural resources. Research by other than Service personnel adds greatly to the information base for Refuge Managers to make proper decisions. Disturbance to wildlife and vegetation by researchers could occur through observation, mist-netting, banding, and accessing the study area by foot. It is possible that direct mortality could result as a by-product of research activities. Mist-netting for example, can cause stress, especially when birds are captured, banded and weighed. There have been occasional mortalities to these birds, namely when predators such as raccoons and cats reach the netted birds before researchers do.

Minimal impact will occur when research projects which are previously approved are carried out according to the stipulations stated in the Special Use Permit issued for each project. Overall, however, allowing well designed and properly reviewed research to be conducted by non-Service personnel is likely to have very little 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 an entire species, habitat or public use.

Allowing research to be conducted by non-Service personnel would have very little impact on Service interests. If the research project is conducted with professionalism and integrity, potential adverse impacts can far outweigh the data and knowledge gained

Finding of Appropriateness of a Refuge Use

Refuge Name: Wapack National Wildlife Refuge

Use: Camping

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

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

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

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

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 X **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.

Justification for a Finding of Appropriateness of a Refuge Use

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Refuge Name: Wapack National Wildlife Refuge

Use: Camping

Narrative

To comply with 2006 Service policy on appropriateness, we are evaluating all non-priority public uses for the refuge. Camping is not identified as a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (NWRISIA). Camping will not be allowed on the refuge for several reasons.

Deed restrictions exist for Wapack NWR requiring the refuge to be used "...for wilderness purposes the preservation of the area as a place where the earth and its community of life remain untrammelled by man, where man is a visitor who does not remain, in order that the area will remain unimpaired for future use and enjoyment as a wilderness" The essence of the deed restrictions require that the refuge be left in a natural state where humans visit.

Additionally, if we allow camping on the refuge visitors may wander off trail to find suitable sites and consequently cause increased soil and vegetation compaction and disturbance to wildlife. Camping encourages visitors to stay overnight and leave behind trash, food, and human waste which are both ecological and aesthetic problems. Law enforcement and safety may also become greater concerns if campers are not responsible or do not exercise caution. We do not want to promote Wapack refuge as a destination for camping.

Finally, camping was not an activity in which the public expressed interest during our public scoping meetings.

After reevaluating camping under Service policies, deed restrictions, other complications, and demand, we conclude that we will not allow this activity. Since we have never observed any camping on the refuge, we do not expect that prohibiting this activity will significantly impact current or future visitors. However, prohibiting camping may positively impact wildlife and wildlife habitat; if only by reducing the amount trash, food, and human waste left behind, and soil compaction, vegetation trampling, and the frequency and extent of wildlife disturbance.

Finding of Appropriateness of a Refuge Use

Refuge Name: Wapack National Wildlife Refuge

Use: Mountain Biking

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

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

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

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

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 X **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.

Justification for a Finding of Appropriateness of a Refuge Use

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Refuge Name: Wapack National Wildlife Refuge

Use: Mountain Biking

Narrative

To comply with 2006 Service policy on appropriateness, we are evaluating all non-priority public uses for the refuge. Mountain biking is not identified as a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (NWRISA). Mountain biking will not be allowed on the refuge for several reasons.

Deed restrictions exist for Wapack NWR requiring the refuge to be used "...for wilderness purposes the preservation of the area as a place where the earth and its community of life remain untrammelled by man, where man is a visitor who does not remain, in order that the area will remain unimpaired for future use and enjoyment as a wilderness" The essence of the deed restrictions require that the refuge be left in a natural state where humans visit. In our opinion, mountain biking would diminish the "wilderness-like" setting described in the deed and may detract from the enjoyment of the refuge for other visitors.

Changing conditions at the refuge further reinforces our decision. Mountain biking may degrade the trails and cause further erosion. Although foot travel is allowed on established trails so that visitors may experience the priority public uses of wildlife observation, photography and environmental education; mountain biking is not required to experience these uses. Furthermore, portions of the trails are very steep with rock outcroppings and some erosion due to foot travel. Mountain biking may degrade the trail, cause further erosion on steeper areas of trails, and cause safety hazards to other visitors.

Trail maintenance is another issue. Wapack NWR is an unstaffed refuge and will likely remain unstaffed for the near future. Trails are monitored and maintained by the Friends of the Wapack and the Mountain View Hiking Club to provide a safe and quality visitor experience. The trail surfaces are maintained several times during the year as necessary. Any additional damage to trails would put an unnecessary burden on the Friends of the Wapack and the Mountain View Hiking Club.

Finally, mountain biking was not an activity in which the public expressed interest during our public scoping meetings.

After reevaluating mountain biking under Service policies, deed restrictions, current conditions, required maintenance, and demand, we conclude that we will not allow this activity. Since we have never observed any bikers using the refuge, we do not expect that prohibiting this activity will significantly impact current or future visitors. However, prohibiting mountain biking may positively impact soils and wildlife; if only by reducing the amount of erosion and soil compaction that might occur on trails and the frequency and extent of wildlife disturbance. Mountain biking is not a wildlife dependent public use, nor is it necessary to support a priority public use, and it may decrease the enjoyment of the refuge for other visitors.

Finding of Appropriateness of a Refuge Use

Refuge Name: Wapack National Wildlife Refuge

Use: Horseback Riding

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

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

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

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 X **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.

Justification for a Finding of Appropriateness of a Refuge Use

Refuge Name: Wapack National Wildlife Refuge

Use: Horseback Riding

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Narrative

To comply with 2006 Service policy on appropriateness, we are evaluating all non-priority public uses for the refuge. Horseback riding is not identified as a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (NWRISIA). Horseback riding will not be allowed on the refuge for several reasons.

Deed restrictions exist for Wapack NWR requiring the refuge to be used "...for wilderness purposes the preservation of the area as a place where the earth and its community of life remain untrammelled by man, where man is a visitor who does not remain, in order that the area will remain unimpaired for future use and enjoyment as a wilderness" The essence of the deed restrictions require that the refuge be left in a natural state where humans visit. In our opinion, horseback riding would diminish the "wilderness-like" setting described in the deed and may detract from the enjoyment of the refuge for other visitors.

Changing conditions at the refuge further reinforces our decision. Horseback riding may degrade the trails and cause further erosion. Although foot travel is allowed on established trails so that visitors may experience the priority public uses of wildlife observation, photography and environmental education; horseback riding is not required to experience these uses. Furthermore, portions of the trails are very steep with rock outcroppings and some erosion due to foot travel. Horseback riding may degrade the trail, cause further erosion on steeper areas of trails, and cause safety hazards to other visitors.

Horses may also leave piles of their manure along the trail, degrading the enjoyment of the refuge for other visitors. Additionally, Horse manure may contain viable seeds from invasive plants (Wells and Lauenroth 2007) which may become a management problem for the refuge.

Trail maintenance is another issue. Wapack NWR is an unstaffed refuge and will likely remain unstaffed for the near future. Trails are monitored and maintained by the Friends of the Wapack and the Mountain View Hiking Club to provide a safe and quality visitor experience. The trail surfaces are maintained several times during the year as necessary. Any additional damage to trails would put an unnecessary burden on the Friends of the Wapack and the Mountain View Hiking Club.

Finally, horseback riding was not an activity in which the public expressed interest during our public scoping meetings.

After reevaluating horseback riding under Service policies, deed restrictions, current conditions, aesthetic and ecological implications, required maintenance, and demand, we conclude that we will not allow this activity. Since we have never observed any horseback riders using the refuge, we do not expect that prohibiting this activity will significantly impact current or future visitors. However, prohibiting horseback riding may positively impact soils and wildlife; if only by reducing the amount of erosion and soil compaction that might occur on trails, the frequency and extent of wildlife disturbance, and disallowing a potential vector of invasive plants. Horseback riding is not a wildlife dependent public use, nor is it necessary to support a priority public use, and it may decrease the enjoyment of the refuge for other visitors.

References

Wells F.H., and W. K. Lauenroth. 2007. The Potential for Horses to Disperse Alien Plants Along Recreational Trails. *Rangeland Ecology & Management*: Vol. 60, No. 6 pp. 574-577.

Finding of Appropriateness of a Refuge Use

Refuge Name: Wapack National Wildlife Refuge

Use: Organized or Facility-supported Picnicking

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

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

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

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

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 X **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.

Justification for a Finding of Appropriateness of a Refuge Use

Refuge Name: Wapack National Wildlife Refuge

Use: Organized Picnicking

Narrative

To comply with 2006 Service policy on appropriateness, we are reevaluating all non-priority public uses for the refuge. Organized picnicking is not identified as a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (NWRISIA). Since the decision to allow organized picnicking on the refuge in 1994, the Service's standards for what are appropriate and compatible public uses on refuges have increased. Organized picnicking, although permitted in the past, will no longer be allowed on the refuge for several reasons.

Deed restrictions exist for Wapack NWR requiring the refuge to be used "...for wilderness purposes the preservation of the area as a place where the earth and its community of life remain untrammelled by man, where man is a visitor who does not remain, in order that the area will remain unimpaired for future use and enjoyment as a wilderness" The essence of the deed restrictions require that the refuge be left in a natural state where humans visit.

Additionally, we do not have the infrastructure in place to accommodate for organized picnicking activities. Therefore, if we continued to allow this use visitors may wander off trail to find a suitable site and consequently cause increased soil and vegetation compaction and disturbance to wildlife. Continuing to allow this use may also result in trash and food waste that may attract nuisance species to the area. We do not want to promote Wapack refuge as a destination for picnicking. Although we are prohibiting organized picnicking, this does not preclude visitors from bringing food with them for nutrition or safety while they participate in other appropriate and compatible activities on the refuge such as hiking, backpacking, or wildlife observation.

Finally, organized picnicking was not an activity in which the public expressed interest during our public scoping meetings.

After reevaluating organized picnicking under Service policies, deed restrictions, required infrastructure, and demand, we conclude that we will no longer allow this activity. Since we have never observed any organized picnics on the refuge, we do not expect that prohibiting this activity will significantly impact current or future visitors. However, prohibiting organized picnicking may positively impact wildlife and wildlife habitat; if only by reducing the amount of soil compaction, vegetation trampling, and trash and food waste that might occur on and off trails and the frequency and extent of wildlife disturbance.

Finding of Appropriateness of a Refuge Use

Refuge Name: Wapack National Wildlife Refuge

Use: Jogging

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

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

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

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

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 X **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.

Justification for a Finding of Appropriateness of a Refuge Use

Refuge Name: Wapack National Wildlife Refuge

Use: Jogging

Narrative

To comply with 2006 Service policy on appropriateness, we are reevaluating all non-priority public uses for the refuge. Jogging is not identified as a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997 (NWRISIA). Since the decision to allow jogging on the refuge in 1994, the Service's standards for what are appropriate and compatible public uses on refuges have increased. Jogging, although permitted in the past, will no longer be allowed on the refuge for several reasons.

Deed restrictions exist for Wapack NWR requiring the refuge to be used "...for wilderness purposes the preservation of the area as a place where the earth and its community of life remain untrammled by man, where man is a visitor who does not remain, in order that the area will remain unimpaired for future use and enjoyment as a wilderness" The essence of the deed restrictions require that the refuge be left in a natural state where humans visit. In our opinion, jogging would detract from the enjoyment of the refuge for other visitors engaged in wildlife-dependent activities.

Foot travel is allowed on established trails so that visitors may experience the priority public uses of wildlife observation, photography and environmental education; jogging is not required to experience these uses. Furthermore, portions of the trails are very steep with rock outcroppings that hikers must traverse. Joggers attempting to run along these portions may endanger themselves and other visitors.

Trail maintenance is another issue. Wapack NWR is an unstaffed refuge and will likely remain unstaffed for the near future. Trails are monitored and maintained by the Friends of the Wapack and the Mountain View Hiking Club to provide a safe and quality visitor experience. The trail surfaces are maintained several times during the year as necessary. Any additional damage to trails would put an unnecessary burden on the Friends of the Wapack and the Mountain View Hiking Club.

Finally, jogging was not an activity in which the public expressed interest during our public scoping meetings.

After reevaluating jogging under Service policies, deed restrictions, required maintenance, and demand, we conclude that we will no longer allow this activity. Since we have never observed any joggers using the refuge, we do not expect that prohibiting jogging will significantly impact current or future visitors. Jogging is not a wildlife dependent public use, nor is it necessary to support a priority public use, and it may decrease the enjoyment of the refuge for other visitors.

Compatibility Determination

Use: Wildlife Observation and Photography and Environmental Education and Interpretation

Refuge Name: Wapack National Wildlife Refuge

Date Established: May 17, 1972

Establishing Authority: Migratory Bird Conservation Act [16 U.S.C. 715d]

Purposes for which Established:

The Wapack National Wildlife Refuge was established “for use as an inviolate sanctuary, or for any other management purpose, for migratory birds....” [16 U.S.C. 715d; Migratory Bird Conservation Act]

Mission of the National Wildlife Refuge System:

"The mission of the System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." — National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57; 111 Stat. 1282)

Description of Use:

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

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

(b) Where would the uses be conducted?

Wildlife observation and photography, environmental education, and interpretation will be conducted throughout the 4-mile segment of the Wapack Trail that cuts through the refuge, the 1.1-mile Cliff Trail, and the 3 –mile section of Ted’s and Carolyn’s trail that traverses the refuge.

(c) When would the uses be conducted?

We will conduct them daily, year-round, from half an hour before sunrise to half an hour after sunset, unless a conflict with a trail maintenance activity or an extenuating circumstance necessitates our deviating from those procedures. Examples are closures for snow and ice storms or other events affecting human safety.

(d) How would the uses be conducted?

We will allow wildlife observation and photography, environmental education and interpretation on the 4-mile segment of the Wapack Trail that cuts through the refuge, the 1.1-mile Cliff Trail, and the 3 –mile section of Ted’s and Carolyn’s trail that traverses the refuge. To support these activities, there is currently a topographic map at the northern terminus of the trail and the *Guide to the Wapack Trail* provided by the Friends of the Wapack. No mountain biking, motorized vehicles, or horseback riding are allowed.

The Service’s preferred alternative would enhance the infrastructure to increase wildlife observation, photography, environmental education, and interpretation opportunities on the refuge. We will utilize partnerships (i.e. Town of Greenfield) to establish a parking area at the Northern terminus of the refuge (at Old Mountain Road). We will also develop a memorandum of understanding (MOU) with the Friends of the Wapack (FOW) for maintenance of the segment of the Wapack Trail and the Cliff Trail that goes through the refuge, and with the Mountain View Hiking Club for maintenance of the sections of Ted’s and Carolyn’s Trail that cross into the refuge. Improvements in signage will include installing an informational sign at the Wapack trailhead and refuge entrance signs to Ted and Carolyn’s trail. We would also increase the number

of boundary signs posted around the refuge, where necessary to make them intervisible. Partnerships with various local organizations (i.e. New Hampshire Division of Parks and Recreation, Harris Center for Conservation Education) will be utilized to enhance outreach and education efforts on the refuge.

(e) Why are these uses being proposed?

The Refuge System Improvement Act defines wildlife observation, photography, environmental education and interpretation as priority public uses that, if compatible, are to receive our enhanced consideration over other general public uses. Authorizing these uses will produce better-informed public advocates for Service programs.

These uses will provide opportunities for visitors to observe and learn about wildlife and wild lands at their own pace in an unstructured environment, and observe wildlife in their natural habitats firsthand. They will provide visitors with compatible educational and recreational opportunities to enjoy refuge resources and gain better understanding and appreciation of wildlife, wild lands ecology, the relationships of plant and animal populations in an ecosystem, and wildlife management. They will enhance public understanding of ecological concepts, enable the public to better understand the problems facing our wildlife and wild lands resources, help them realize what effect the public has on wildlife resources, learn about the Service role in conservation, and better understand the biological facts upon which we base Service management programs.

Professional and amateur photographers alike will gain opportunities to photograph wildlife in its natural habitat. Those opportunities obviously will increase the publicity and advocacy of Service programs. These uses will provide wholesome, safe, outdoor recreation in a scenic setting, and entice 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.

Availability of Resources: Estimates derived from the Service’s Region 5 *Construction and Rehabilitation Cost Estimating Guide* in part.

Parking area construction	\$20,000 (10 – 12 spaces)
3-panel information sign	\$5,000

Anticipated Impacts of the Uses:

These uses can produce positive or negative and direct or indirect impacts on wildlife or habitats.

Direct Effects

Direct impacts are those where the activity has an immediate effect on wildlife. We expect those to include the presence of humans disturbing wildlife, which typically results in a temporary displacement without long-term effects on individuals or populations. Some species will avoid areas frequented by people, while others seem unaffected or even drawn to human presence. Overall, direct effects should be insignificant, because public use will be limited to the designated trail system.

Indirect Effects

When people move from one area to another, they can be vectors for the seeds or other propagules of invasive plants. Once established, invasive plants can out-compete native plants, thereby altering habitats and indirectly impacting wildlife. The threat of invasive plants establishing themselves will always be an issue that requires monitoring. Within 2 years of CCP completion, the USFS Forest Health Protection Program would complete a full forest health assessment that would help determine if any invasive species inhabit the refuge.

Cumulative Effects

Effects that are minor when we consider them separately but may be important when we consider them collectively are cumulative effects. The principal concerns are repeated disturbances of birds that are

nesting, foraging, or resting. Opening refuge land to public use can often result in litter, vandalism, or other illegal activities.

Our observations and knowledge of the areas involved provide no evidence that, cumulatively, these proposed wildlife-dependent uses will have an unacceptable effect on the wildlife resource. Although we do not expect a substantial increase in the cumulative effects of public use in the near term, it will be important for refuge staff to monitor public use and respond, if necessary, to conserve the high-quality wildlife resources on the refuge.

We expect no additional effects from wildlife observation, wildlife photography, environmental education or interpretation. Refuge staff will monitor and evaluate the effects of public use in collaboration with volunteers to discern and respond to unacceptable impacts on wildlife or habitats.

Public Review and Comment:

As part of the comprehensive conservation planning process for Wapack refuge, this compatibility determination will undergo extensive public review, including a comment period of at least 30 days following the release of the Draft CCP/EA.

Determination (check one below):

Use is Not Compatible

Use is Compatible, with the following stipulations

Stipulations Necessary to Ensure Compatibility:

We will monitor public use on the trail at various times of the year to assess the disturbance of wildlife. The *Guide to the Wapack Trail*, published by the Friends of the Wapack, identifies the refuge wildlife resources, and the prohibition against disturbing wildlife. Wildlife observation, photography, environmental education, and interpretation will only be allowed on the refuge from half an hour before sunrise to half an hour after sunset.

Justification:

Wildlife observation and photography, and environmental education and interpretation are priority wildlife-dependent uses, through which the public can develop an appreciation for fish and wildlife [Executive Order 12996, March 25, 1996, and the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997].

Service policy is to provide expanded opportunities for those uses when they are compatible and consistent with sound fish and wildlife management, and ensure that they receive enhanced consideration in refuge planning and management. Allowing them on the refuge will not materially interfere with or detract from the mission of the Refuge System or the purposes for which the refuge was established.

Signature: Refuge Manager:

(Signature and Date)

Concurrence: Regional Chief:

(Signature and Date)

Mandatory 15-year Reevaluation Date:

(Date)

Compatibility Determination

Use: Walking/Hiking, Backpacking, Cross Country Skiing, Snowshoeing

Refuge Name: Wapack National Wildlife Refuge

Date Established: May 17, 1972

Establishing Authority: Migratory Bird Conservation Act of 1929

Purposes for which Established:

The Wapack National Wildlife Refuge was established "... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." Migratory Bird Conservation Act 16 U.S.C. 715-715d, 715f – 715r

Mission of the National Wildlife Refuge System:

"The mission of the System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." — National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57; 111 Stat. 1282)

Description of Use:

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

The uses are walking/hiking, backpacking, cross country skiing, and snowshoeing. These are not priority public uses of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), and the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57). However, refuge staff believe by allowing these activities, that the participants will be positively exposed to the refuge and the Refuge System. This exposure may lead to a better understanding of the importance of the Refuge System to the American people. The aforementioned activities have occurred on the refuge for many years.

(b) Where would the use be conducted?

These activities will be conducted throughout the 4-mile segment of the Wapack Trail that cuts through the refuge, the 1.1-mile Cliff Trail, and the 3 –mile section of Ted's and Carolyn's trail that traverses the refuge.

(c) When would the use be conducted?

We will conduct them daily, year-round, from half an hour before sunrise to half an hour after sunset, unless a conflict with a trail maintenance activity or an extenuating circumstance necessitates our deviating from those procedures. Examples are closures for snow and ice storms or other events affecting human safety.

(d) How would the use be conducted?

Refuge trails are open from half an hour before sunrise to half an hour after sunset daily, unless closed for maintenance or safety reasons.

Bicycles are not allowed on the refuge.

Visitors are required to remain on the designated trail system to minimize environmental damage and prevent accidents.

Collecting of any kind is not allowed, nor is disturbing or feeding wildlife.

Trails are monitored and maintained by the Friends of the Wapack and the Mountain View Hiking Club to provide a safe and quality visitor experience. The trail surfaces are maintained each year as necessary

Currently, dogs are allowed on the trails while on a leash and under the control of their master.

(e) Why is this use being proposed?

These are existing and longstanding uses on Wapack and most national wildlife refuges. These are not priority public uses on national wildlife refuges, however, refuge staff believe, by allowing these activities, that the participants will be positively exposed to the Refuge and the Refuge System. This exposure may lead to a better understanding of the importance of the Refuge System to the American people and to their support for refuge acquisition and management.

Availability of Resources:

The resources necessary to provide and administer this use are available within current and anticipated refuge budgets. Trail maintenance is provided by the Friends of the Wapack and the Mountain View Hiking Club.

Anticipated Impacts of the Use:

The presence of people walking, hiking, backpacking, skiing, and snowshoeing could result in some disturbance to wildlife located in habitats adjacent to the trail system. However, this disturbance should only be short term. The use of the trails could lead to soil compaction causing some tree roots to be exposed if they are close to the ground surface. Markers and refuge boundary signs encourage trail users to stay on the trail to minimize effects on surrounding vegetation. Other impacts in violation of refuge regulations such as littering or illegal take of wildlife could occur. Refuge staff believe that with the proper management, walking, hiking, backpacking, skiing, and snowshoeing will not result in any short- or long-term impacts that will adversely affect the purpose of the refuge or the mission of the National Wildlife Refuge System.

Public Review and Comment:

As part of the comprehensive conservation planning process for Wapack refuge, this compatibility determination will undergo extensive public review, including a comment period of at least 30 days following the release of the Draft CCP/EA.

Determination (check one below):

Use is Not Compatible

Use is Compatible with the Following Stipulations

Stipulations Necessary to Ensure Compatibility:

To minimize or avoid negative impacts to wildlife and habitat:

- Harassment, baiting, playback tapes, or electronic calls are not allowable methods to attract wildlife for observation or photography (this does not necessarily apply to management activities, e.g., approved research or surveys, which are evaluated on a case-by-case basis).
- Currently dogs must be kept and controlled on a leash.
- Collecting of any kind is prohibited. This does not necessarily apply to management activities, e.g., approved research or surveys, which are evaluated on a case-by-case basis.

Justification:

The Service and the National Wildlife Refuge System maintain goals of providing opportunities to view wildlife. Allowing the use of the trail system by persons engaging in walking, hiking, backpacking, cross country skiing, and snowshoeing will provide visitors the chance to view wildlife. This activity promotes an appreciation for the continued conservation and protection of wildlife and habitat. Walking, hiking,

backpacking, cross country skiing, and snowshoeing would not materially interfere with or detract from the mission of the National Wildlife Refuge System or the purposes for which the Refuge was established.

Signature: Refuge Manager:

(Signature and Date)

Concurrence: Regional Chief:

(Signature and Date)

Mandatory 10-year Reevaluation Date:

(Date)

Compatibility Determination

Use: Dog Walking

Refuge Name: Wapack National Wildlife Refuge

Date Established: May 17, 1972

Establishing Authority: Migratory Bird Conservation Act of 1929

Purposes for which Established:

The Wapack National Wildlife Refuge was established "... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." Migratory Bird Conservation Act 16 U.S.C. 715-715d, 715f – 715r

Mission of the National Wildlife Refuge System:

"The mission of the System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." — National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57; 111 Stat. 1282)

Description of Use:

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

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

(b) Where would the use be conducted?

Dog walking will be conducted throughout the 4-mile segment of the Wapack Trail that cuts through the refuge, the 1.1-mile Cliff Trail, and the 3-mile section of Ted's and Carolyn's trail that traverses the refuge.

(c) When would the use be conducted?

We will conduct this activity daily, year-round, from half an hour before sunrise to half an hour after sunset, unless a conflict with a trail maintenance activity or an extenuating circumstance necessitates our deviating from those procedures. Examples are closures for snow and ice storms or other events affecting human safety.

(d) How would the use be conducted?

Refuge trails are open from half an hour before sunrise to half an hour after sunset daily, unless closed for maintenance or safety reasons.

For education and outreach purposes, the new orientation sign (northern terminus of the refuge) proposed under the preferred alternative would provide a list of activities that are allowed and prohibited on the refuge. Dog walking would be one of the activities listed on the sign. We would also work with partners (i.e. New Hampshire Parks and Recreation) to develop a sign at the northern end of Miller State Park that would explain the detrimental effects of letting a dog off leash.

Dogs must be kept on a leash and under direct control of their owners at all times. Owners will be required to clean up after their dogs. We would strictly enforce these new policies to minimize wildlife and visitor disturbance. With our volunteers and partners, we would monitor dog walking over the next 5 years to

determine if visitors are adhering to the leash law. If we find that the majority of dog walkers are not complying, we would be prepared to prohibit dog walking altogether. We will print the rules and consequence of violating the leash law on the new orientation sign.

(e) Why is this use being proposed?

Visitors can participate in wildlife-dependent recreation while walking a dog. There is a current demand for this use on the refuge, and therefore, we have reevaluated our existing policy on dog walking to better meet the needs of our public and minimize wildlife disturbances.

Availability of Resources:

The resources necessary to provide and administer this use are available within current and anticipated refuge budgets. There is no additional staff or material costs incurred to the refuge.

Anticipated Impacts of the Use:

There can be an increase in wildlife disturbance from dog walking simply due to normal dog behavior (i.e. jumping, barking, running off a leash). At some level, domestic dogs maintain instincts to hunt and/or chase. Given the appropriate stimulus, those instincts can be triggered in many different settings. Even if the chase instinct is not triggered, dog presence in and of itself has been shown to disrupt many wildlife species (Sime 1999). Sime presents some effects of disturbance, harassment, and displacement on wildlife attributable to domestic dogs that accompany recreationists. Sime states, authors of many wildlife disturbance studies concluded that dogs with people, dogs on-leash, or loose dogs provoked the most pronounced disturbance reactions from their study animals. Dogs extend the zone of human influence when off-leash. Many ungulate species demonstrated more pronounced reactions to unanticipated disturbances, as a dog off-leash would be until within very close range. In addition, dogs can force movement by ungulates (avoidance or evasion during pursuit), which is in direct conflict with overwinter survival strategies which promote energy conservation. Sime continues to highlight that dogs are noted predators for various wildlife species in all seasons. Domestic dogs can potentially introduce diseases (distemper, parvovirus, and rabies) and transport parasites into wildlife habitats. While dog impacts to wildlife likely occur at the individual scale, the results may still have important implications for wildlife populations. For most wildlife species, if a “red flag” is raised by pedestrian-based recreational disturbance, there could also be problems associated with the presence of domestic dogs.

Lastly, dog waste can create sanitation issues and an unsightly environment to other refuge visitors.

Public Review and Comment:

As part of the comprehensive conservation planning process for Wapack refuge, this compatibility determination will undergo extensive public review, including a comment period of at least 30 days following the release of the Draft CCP/EA.

Determination (check one below):

Use is Not Compatible

Use is Compatible with the Following Stipulations

Stipulations Necessary to Ensure Compatibility:

Dogs must be on a leash under direct control of their owners at all times.

Owners must pick up after their dog(s) and remove the feces from the refuge.

Over the next five years, we would monitor dog walking with our volunteers and partners.

If we find that the majority of dog walkers are not complying, we would be prepared to prohibit dog walking altogether.

Dog walking will be listed on the new orientation sign as an acceptable use of the refuge.

We will print the rules and consequence of violating the leash law on the new orientation sign.

We will work with partners to develop a sign at the northern end of Miller State Park that will explain the detrimental effects of letting a dog off leash.

Justification:

Although dogs can increase disturbance to wildlife, the refuge will enforce a leash law to keep dogs and disturbances localized with the pedestrian. There are no documented incidences of domestic dog-wildlife disturbances, or dog-people problems. We have not had significant negative impacts from this use. Through increased signage and outreach by refuge staff and volunteers regarding dog walking we will encourage visitors to comply with the “dog on leash” policy. We believe most dog walkers are local residents, who regularly visit the refuge for wildlife-dependent recreation, and who understand our policy.

Dog walking would not materially interfere with or detract from the mission of the National Wildlife Refuge System or the purposes for which the Refuge was established.

Signature: Refuge Manager:

(Signature and Date)

Concurrence: Regional Chief:

(Signature and Date)

Mandatory 10-year Reevaluation Date:

(Date)

References

Sime, C. A. 1999. Domestic Dogs in Wildlife Habitats. Pages 8.1-8.17 *in* G. Joslin and H. Youmans, coordinators. Effects of recreation on Rocky Mountain wildlife: A Review for Montana. Committee on Effects of Recreation on Wildlife, Montana Chapter of The Wildlife Society. 307pp.

Compatibility Determination

Use: Berry Picking

Refuge Name: Wapack National Wildlife Refuge

Date Established: May 17, 1972

Establishing Authority: Migratory Bird Conservation Act of 1929

Purposes for which Established:

The Wapack National Wildlife Refuge was established "... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." Migratory Bird Conservation Act 16 U.S.C. 715-715d, 715f – 715r

Mission of the National Wildlife Refuge System:

"The mission of the System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." — National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57; 111 Stat. 1282)

Description of Use:

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

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

(b) Where would the use be conducted?

Recreational berry picking will be conducted throughout the three mile segment of the Wapack Trail that cuts through the refuge.

(c) When would the use be conducted?

Berries are usually ripe and suitable for picking from mid-July until the end of August.

(d) How would the use be conducted?

Individuals seeking berries are allowed to enter the trail and hand pick the fruit for personal consumption. The anticipated level of use is very low and it is not anticipated that it will be necessary to set any limit on the number of pickers allowed. Berry harvesting is allowed only during daylight hours and use of rakes is prohibited. Pickers will be limited to collecting only enough for personal or family consumption. Commercial picking is not permitted.

(e) Why is this use being proposed?

Berry picking is a historic and traditional use of the area. This use is known to have occurred in the area for many years.

Availability of Resources:

The resources necessary to provide and administer this use are available within current and anticipated refuge budgets. Staff time associated with the administration of this use is primarily related to answering general questions from the public and monitoring impacts of the use on refuge resources. The use of the refuge staff to monitor the impacts of public uses on refuge resources, and visitors is required for

administering all refuge public uses. Therefore, these responsibilities and related equipment are accounted for in budget and staffing plans.

Anticipated Impacts of the Use:

Impacts such as trampling vegetation and temporarily disturbing wildlife would occur, but is not anticipated to be significant.

Significant numbers of visitors walking off established trails to collect berries can impact plants indirectly by compacting soils and diminishing soil porosity, aeration and nutrient availability, affecting plant growth and survival (Kuss 1986). Re-colonization of plants will be limited because root growth and penetration becomes more difficult in compacted soils (Hammitt and Cole 1998). Foot travel increases root exposure, trampling effects and crushing of plants. Plants adapted to wet or moist soils are most sensitive to disturbance from trampling effects (Kuss 1986).

In this manner, this use will cause some vegetation loss. It is anticipated, however, that under current levels of use, the incidence of these problems will be minor and insignificant. Many of the berry bushes are located right next to the trail, alleviating the need for a lot of traffic off the trail.

Wildlife may avoid using otherwise suitable habitat when temporarily disturbed by visitors. Again, it is anticipated that under current levels of use, the incidence of this will be minor and insignificant.

It is generally held that the harvest of berries by people in a wild, difficult to access environment such as the refuge is not sufficiently efficient nor so extensive so as to negatively impact the use and availability of the overall berry crop by wildlife.

Public Review and Comment:

As part of the comprehensive conservation planning process for Wapack refuge, this compatibility determination will undergo extensive public review, including a comment period of at least 30 days following the release of the Draft CCP/EA.

Determination (check one below):

Use is Not Compatible

Use is Compatible with the Following Stipulations

Stipulations Necessary to Ensure Compatibility:

Berry picking will be permitted only in designated trail areas to minimize the damage to vegetation by trampling. Portions of the berry picking area or, if appropriate, the entire area can be closed at any time for any length of time if the Refuge Manager determines that wildlife or wildlife habitat is being impacted by the activity.

Justification:

With the above-mentioned consideration, berry picking on Wapack National Wildlife Refuge is compatible with refuge purposes. Berry picking has been a historical and traditional use of the refuge for the many years. No adverse impacts from the activity are known or documented at this refuge.

Berry picking will not materially interfere with or detract from the mission of the National Wildlife Refuge System or the purposes for which the Refuge was established.

Signature: Refuge Manager:

(Signature and Date)

Concurrence: Regional Chief:

(Signature and Date)

Mandatory 10-year Reevaluation Date:

(Signature and Date)

References

Hammitt, W. E. and Cole, D. N. 1998. Wildland Recreation. John Wiley & Sons, New York, 361pp.

Kuss, F. R. 1986. A review of major factors influencing plant responses to recreation impacts. Environmental Management 10:638-650.

Compatibility Determination

Use: Research conducted by non-Service personnel

Refuge Name: Wapack National Wildlife Refuge

Date Established: May 17, 1972

Establishing Authority: Migratory Bird Conservation Act of 1929

Purposes for which Established:

The Wapack National Wildlife Refuge was established "... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." Migratory Bird Conservation Act 16 U.S.C. 715-715d, 715f – 715r

Mission of the National Wildlife Refuge System:

"The mission of the System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." — National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57; 111 Stat. 1282)

Description of Use:

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

The use is research conducted by non-Service personnel. It is not identified as a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997. This use is not a priority public use of the Refuge System.

(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 is open and available for scientific research. An individual research project is usually limited to 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 to those areas of the refuge that are absolutely necessary to conduct of the research project.

(c) When would the use be conducted?

The timing of the research will depend entirely on the individual research project's approved design. Scientific research would 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 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 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, negatively impacts upland birds and wintering raptors, or compromises public health and safety.

(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. This research would further the understanding of the natural environment and could be applied to management of the refuge's wildlife.

Availability of Resources:

Wapack Refuge is an unstaffed satellite refuge administered by Great Bay NWR. 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. We expect that conducting these activities will require less than one-tenth of a work-year for one staff member.

Anticipated Impacts of the Use:

The Service encourages approved research to further the understanding of the natural resources. Research by other than Service personnel adds greatly to the information base for Refuge Managers to make proper decisions. Disturbance to wildlife and vegetation by researchers could occur through observation, mist-netting, banding, and accessing the study area by foot. It is possible that direct mortality could result as a by-product of research activities. Mist-netting for example, can cause stress, especially when birds are captured, banded and weighed. There have been occasional mortalities to these birds, namely when predators such as raccoons and cats reach the netted birds before researchers do.

Minimal impact will occur when research projects which are previously approved are carried out according to the stipulations stated in the Special Use Permit issued for each project. Overall, however, allowing well designed and properly reviewed research to be conducted by non-Service personnel is likely to have very little 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 an entire species, habitat or public use.

Allowing research to be conducted by non-Service personnel would have very little impact on Service interests. If the research project is conducted with professionalism and integrity, potential adverse impacts can far outweigh the data and knowledge gained.

Public Review and Comment:

As part of the comprehensive conservation planning process for Wapack refuge, this compatibility determination will undergo extensive public review, including a comment period of at least 30 days following the release of the Draft CCP/EA.

Determination (check one below):

Use is Not Compatible

Use is Compatible with the Following Stipulations

Stipulations Necessary to Ensure Compatibility:

We will require all researchers to submit a detailed research proposal that follows Wapack National Wildlife Refuge study proposal guidelines (see attachment I) and Service Policy (FWS Refuge 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 or other permits before starting the research. We will prioritize and approve proposals based on the need, benefit, compatibility, and funding required for the research.

Proposals

We will expect researchers to submit a final report to the refuge on completing their work. For long-term studies, we may also require interim progress reports. We also expect that research will be published in

peer-reviewed publications. All reports, presentations, posters, articles or other publications will acknowledge the Refuge System and the Wapack refuge as partners in the research. All posters will adhere to Service graphics standards. We insert that requirement to ensure that the research community, partners, and the public understand that the research could not have been conducted without the refuge having been established, its operational support, and that of the Refuge System.

We will issue Special Use Permits (SUPs) for all research conducted by non-Service personnel. The SUP will list all conditions necessary to ensure compatibility. The SUPs will also identify a schedule for annual progress reports and the submittal of a final report or scientific paper.

We may ask our regional refuge biologists, other Service divisions, state agencies, or academic experts to review and comment on proposals. We will require all researchers to obtain appropriate state and federal permits.

Justification:

The Service encourages approved research to further our understanding of refuge natural resources and management. Research by non- Service personnel adds greatly to the information base for refuge managers to make proper decisions. Research conducted by non-Service personnel will not materially interfere with or detract from the mission of the National Wildlife Refuge System or the purposes for which the refuge was established.

Signature: Refuge Manager:

(Signature and Date)

Concurrence: Regional Chief:

(Signature and Date)

Mandatory 10-year Reevaluation Date:

(Date)

References

U.S. Fish and Wildlife Service. 1985. Refuge Manual. Washington, D.C.: U.S. Government Printing Office.

Attachment I. Wapack National Wildlife Refuge Study Proposal Guidelines

A study proposal is a justification and description of the work to be done, and includes cost and time requirements. The proposals must be specific enough to serve as blueprints for the investigation. They must spell out in advance systematic plans for the investigation at a level of detail commensurate with the cost and scope of the project and the needs of management. Please submit proposals electronically as a Microsoft® Word® document or hard copy to the refuge manager.

The following list provides a general outline of first-order headings/sections for study proposals.

- Cover Page
- Table of Contents (for longer proposals)
- Abstract
- Statement of Issue
- Literature Summary
- Objectives/Hypotheses
- Study Area
- Methods and Procedures
- Quality Assurance/Quality Control
- Specimen Collections
- Deliverables
- Special Requirements, Concerns, Necessary Permits
- Literature Cited
- Peer Review
- Budget
- Personnel and Qualifications

Cover Page

The cover page must contain the following information.

- Title of Proposal
- Current Date
- Investigator's(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
- Total Funding Support Requested from the U.S. Fish and Wildlife Service
- 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, generality, 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?

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 the Wapack National Wildlife Refuge. A discussion of relevant legislation, policies, and refuge planning and management history, goals, and objectives should also be included.

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 (QA/QC) procedures help insure 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; and accompanied by detailed method documentation. Describe the procedures to be used to insure 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 and the proposed repository.

Deliverables

The proposal must indicate the number and specific format of hard and/or electronic media copies to be submitted for each deliverable. The number and format will reflect the needs of the refuge and the refuge manager. Indicate how many months after the project is initiated (or the actual anticipated date) that each deliverable will be submitted. Deliverables are to be submitted or presented to the refuge manager.

Deliverables that are required are as follows.

Reports and Publications

Describe what reports will be prepared and the timing of reports. Types of reports required in fulfillment of natural and social science study contracts or agreements include:

- 1). Progress report(s) (usually quarterly, semiannually, or annually): (may be required)
- 2). Draft final and final report(s): (always required).

A final report must be submitted in addition to a thesis or dissertation (if applicable) and all other identified deliverables. Final and draft final reports should follow refuge guidelines (attachment I).

In addition, investigators are encouraged to publish the findings of their investigations in refereed professional, scientific publications and present findings at conferences and symposia. Investigator publications will adhere to Service design standards. The refuge manager appreciates opportunities to review manuscripts in advance of their publication.

Data Files

Provide descriptions of any spatial (GIS) and non-spatial data files that will be generated and submitted as part of the research. Non-spatial data must be entered onto Windows CD-ROMs in Access or Excel. Spatial data, which includes 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 U.S. Fish and Wildlife Service (FGDC) metadata standards.

Oral Presentations

Three types of oral briefings should be included: pre-study, annual, and closeout. These briefings will be presented to refuge staff and other appropriate individuals and cooperators. In addition, investigators should conduct periodic informal briefings with refuge staff throughout the study whenever an opportunity arises. During each refuge visit, researchers should provide verbal updates on project progress. Frequent dialogue between researchers and refuge staff is an essential element of a successful research project.

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.

- 1) Copies of field notes/ notebooks/ datasheets
- 2) Copies of raw data (in digital format), including GIS data, as well as analyzed data
- 3) Copies of all photos, slides (digital photos preferred), videos, films
- 4) Copies of any reports, theses, dissertations, publications or other material (such as news articles) resulting from studies conducted on refuge.
- 5) Detailed protocols used in study
- 6) Aerial photographs
- 7) Maps/GIS
- 8) Interpretive brochures and exhibits
- 9) Training sessions (where appropriate)
- 10) Survey forms
- 11) Value-added software, software developed, models

Additional deliverables may be required of specific studies.

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 Fish and Wildlife 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 archeological 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 USGS 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, 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 if or 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, wildlife capture or handling, wildlife 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 vertebrate 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 your institutional animal welfare committee has reviewed 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.

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 3 to 5 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 U.S. Fish and Wildlife 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 Wapack 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 US Fish and Wildlife 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.

Specimen Collections

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

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 (2) 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.

Interim Final Report Guidelines

Draft final and final reports should follow Journal of Wildlife Management format, and should include the following sections.

- Title Page
- Abstract
- Introduction/ Problem statement
- Study Area
- Methods (including statistical analyses)
- Results
- Discussion
- Management Implications
- Management Recommendations
- Literature Cited