Draft Compatibility Determination

Title

Draft Compatibility Determination for Environmental Education and Interpretation, Kootenai National Wildlife Refuge

Refuge Use Category

Environmental Education and Interpretation

Refuge Use Type(s)

Environmental education (NWRS staff and authorized agents)

Interpretation (NWRS staff and authorized agents)

Environmental education (not conducted by NWRS staff or authorized agent)

Interpretation (not conducted by NWRS or authorized agent)

Refuge

Kootenai National Wildlife Refuge

Refuge Purpose(s) and Establishing and Acquisition Authority(ies)

- "... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." 16 U. S. C 715 et. seq. (Migratory Bird Conservation Act of 1929).
- "... suitable for (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ..." 16 U.S.C. 460k-1 (Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended)
- "... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors ..." 16 U.S.C. 460k-2 (Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended).
- "... for the development, advancement, management, conservation, and protection of fish and wildlife resources ..." 16 U.S.C. 742f(a)(4)
- "... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ..." 16 U.S.C. 99 742f(b)(1) (Fish and Wildlife Act of 1956).

National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System, otherwise known as Refuge System, is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (Pub. L. 105–57; 111 Stat. 1252).

Description of Use

Is this an existing use?

Yes. This compatibility determination (CD) updates and replaces the 2011 compatibility determination for Wildlife Observation and Photography, Interpretation, and Environmental Education with a minor change. The 2011 CD included Wildlife Observation and Photography. These uses are being concurrently reviewed in a separate CD.

What is the use?

Environmental education consists of public outreach and onsite activities conducted by Refuge staff, volunteers, teachers, university professors, and other authorized agents. Interpretation occurs in less formal activities with Refuge staff and volunteers or through exhibits, signs, and brochures. Environmental education is designed to develop a citizenry that has the awareness, concern, knowledge, attitudes, skills, motivations, and commitment to work toward solutions of current environmental problems and the prevention of new ones. Interpretation is a communication process that forges emotional and intellectual connections between the interests of the audience and the inherent meanings in the resource (i.e., interpretation is more than just information). Both are necessary to form relationships between the Service and public and improve a joint stewardship of our natural resources. Environmental education and interpretation are wildlife-dependent public uses as defined by the National Wildlife Refuge Improvement Act of 1997. The use of environmental education and interpretation also includes means of access, such as by vehicle, hiking, biking, snowshoeing, or cross-country skiing, as well as incidental use of picnicking or other infrastructure, such as trails, blinds, or observation decks.

Is the use a priority public use?

Yes

Where would the use be conducted?

Environmental education and interpretation are carried out within the headquarters visitor contact facility and outdoors throughout the Refuge on designated roads, trails, and overlooks. The Refuge has a 4.5-mile Auto Tour Route, five pullouts, and two parking lots associated with the tour route. Additional Refuge parking lots and

pullouts for recreational users include two parking lots located along Riverside Road, four lots located near the Refuge office including the Myrtle Falls Trailhead lot, two parking lots on the southern portion of the Refuge, pullouts along Lion's Den Road, and a parking area for the Cascade Pond observation blind.

Four existing trails will provide access for these uses including the Deep Creek Trail (2.2 miles), Myrtle Creek Trail (0.25 mile), Old Humpback Trail (1.0 mile), and the Chickadee Trail (1000 feet). Cascade Pond has an observation gazebo that can be accessed via a short trail from a parking turnout off Westside Road. A photography blind located on Greenwing Pond may be accessed via a short trail from the Environmental Education Center parking.

In addition to these areas and facilities, environmental education and interpretation will also be conducted in the renovated barn that serves as the Environmental Education building and on the grounds immediately adjoining the Refuge Headquarters and Environmental Education building. The barn is furnished with taxidermy mounts, specimens, and learning materials.

Users engaged in these activities may require occasional off-trail access. Users engaged in off-trail activities will either be accompanied by Refuge staff or managed through the use of Special Use Permits (SUPs). All activities will avoid sensitive areas prone to disturbance or degradation and will be designed to minimize impacts to nesting birds or other breeding wildlife.

Entry on to all or portions of the Refuge may be temporarily suspended and posted closed due to unusual or critical conditions affecting land, water, vegetation, wildlife populations, or public safety.

When would the use be conducted?

Parking lots, pullouts, trails, and observation/photography blinds will be open during daylight hours throughout the year. Refuge visitors may drive, walk, bicycle, snowshoe, or ski the 4.5-mile Auto Tour Route during daylight hours. The Auto Tour Route is closed to vehicles during winter months or in unsafe driving conditions.

The Environmental Education Barn is available to the public by reservation for the purpose of environmental education and/or interpretation. Staff or authorized agents may invite the public to scheduled or impromptu programs or activities as time and staffing permits.

Some Refuge public use programs and activities may require access to the Refuge between sunset and sunrise. These activities will be managed by the Refuge staff and may require SUPs.

How would the use be conducted?

Environmental education activities are provided by Refuge staff, Service volunteers, partners, teachers, or leaders of the visiting groups. In most cases, environmental

education programs are scheduled in advance and augmented with impromptu presentations and discussions of wildlife conservation issues with interested citizens, casual visitors, and unscheduled groups. Group size varies from just a few people to larger groups of about 30 during school visits.

Non-personal interpretation is a self-guided format using exhibits, signs, brochures, and electronic formats (e.g., web-based technology) with additional information being provided by Refuge staff and volunteers. Self-guided interpretation may occur on the Refuge when visitors are engaged in other activities including wildlife observation and photography. In addition, activities such as hiking, biking, cross-country skiing, and snowshoeing can facilitate interpretation. Authorized transportation on the Auto Tour Route includes automobiles, bikes, and foot traffic. Trails are open only to foot traffic year-round and cross-country skiing and snowshoeing during the winter months.

Refuge-sponsored special events are hosted by Refuge staff, Service volunteers, partners, teachers, or leaders of the visiting groups. Local groups or schools can also contact the Refuge and request an environmental education opportunity, and the Refuge will respond according to their availability or schedule a special event, if the request is consistent with the mission, goals, and vision of the Refuge and U.S. Fish and Wildlife Service.

Each request for a SUP (if warranted) will be evaluated for impacts to wildlife, habitats, and other Refuge resources; and priority wildlife-dependent public uses. Conditions may be added to the SUP on a case-by-case basis to minimize the anticipated impacts to resources, and to ensure that any impacts which cannot be avoided, minimized, or mitigated remain temporary and negligible. Some requests may require further analysis of the impacts of the proposed activity on special status species or cultural resources, which may require additional compliance with the National Environmental Policy Act (NEPA), and consultation under any other relevant laws.

If a proposed educational event or activity conflicts with Refuge resources, Refuge management, or priority wildlife-dependent uses, the participant(s) must identify in advance the methods/strategies required to minimize or eliminate the potential impact(s) and conflict(s). If unacceptable impacts cannot be avoided, then the use would not be compatible and an SUP would not be issued.

Why is this use being proposed or reevaluated?

Environmental education and interpretation at the Refuge were previously determined to be compatible (USFWS 2011). These uses are being re-evaluated to comply with updated national compatibility determination template standards at the Refuge Manager's discretion per policy (603 FW 2.11 H.).

Availability of Resources

The following funds will be required to administer environmental education and interpretation on the Refuge:

Table 1. Costs to Administer and Manage Environmental Education and Interpretation

| Category and Itemization | One-time Cost | Recurring Annual Expenses |
|--|---------------|------------------------------|
| Develop signage and brochures | \$5,000 | \$0,000 |
| Staff time (LE, administration and management) | \$0,000 | \$40,000 |
| Maintenance | | \$20,000 |
| Total one-time expenses | \$5,000 | |
| Total recurring annual expenses | | \$60,000 |
| Offsetting revenues | -\$0,000 | -\$0,000 |
| Total expenses | \$5,000 | \$60,000 |

Anticipated Impacts of the Use

This CD includes the written analyses of the environmental consequences on a resource only when the impacts on that resource could be more than negligible and therefore considered an "affected resource." Air quality, water quality, cultural resources, and socioeconomics will not be more than negligibly impacted by the action and have been dismissed from further analyses.

Potential impacts of a proposed use on the Refuge's purpose(s) and the Refuge System mission

Environmental education and interpretation are priority public uses as defined by the Refuge System Administration Act of 1966, as amended by the Refuge System Improvement Act of 1997. If compatible, these priority public uses are to receive enhanced consideration over other general public uses on National Wildlife Refuges.

Environmental education and interpretation are popular activities and are expected to continue in the future. This use is conducted to provide compatible educational and recreational opportunities for visitors to enjoy the Refuge's resources, and to gain or increase their understanding of and appreciation for fish, wildlife, wildlands ecology, the relationships of plant and animal populations within the ecosystem, and wildlife management. This use will provide opportunities for visitors to directly

observe and learn about wildlife and habitats at their own pace in an unstructured environment. This use will enhance the public's understanding of natural resource management programs and ecological concepts to enable them to better understand the problems facing natural resources and to realize what impact the public has on wildlife resources. Additionally, the public can learn about the Service's role in conservation and better understand the biological facts upon which Service management programs are based, consequently fostering an appreciation for the importance of wildlife and habitats. Participation in this use is expected to contribute to a more informed public, with an enhanced stewardship ethic and greater support for wildlife conservation. Furthermore, this use will provide an intrinsic, safe, outdoor recreational opportunity in a scenic setting, with the realization that those who come strictly for recreational enjoyment will be enticed to participate in the more enhanced facets of the visitor use program and can then become informed supporters for wildlife conservation. By allowing this use, we will provide opportunities and facilitate programs in a manner and at locations on the Refuge that offer high quality, wildlife-dependent recreation while maintaining the current levels or increased levels of natural resource values.

Therefore, use of Kootenai National Wildlife Refuge for environmental education and interpretation is expected to benefit and promulgate the Refuge's purpose and the Refuge System's mission.

Short-term impacts

The principal impacts associated with environmental education and interpretation are loss of vegetation, soil compaction, and erosion from trampling in localized areas, and the displacement or habituation of wildlife due to human presence and activities.

Periodic maintenance or upgrades performed by Service staff or volunteers to existing supporting facilities (public roads) also have the potential to cause short-term impacts to fish and wildlife in the form of visual disturbance, noise, vegetation loss, soil manipulation, runoff, and dust and vehicle emissions.

Immediate responses by wildlife to human activity can range from behavioral changes including nest abandonment, altered nest placement, and change in food habits to physiological changes such as elevated heart rates, increased energetic costs due to flight or flushing, or even death (Belanger and Bedard 1990; Kight and Swaddle 2007; Miller and Hobbs 2000; Miller et al. 1998; Morton et al. 1989). According to Cole and Knight (1990), there are three wildlife responses to human disturbance: avoidance, habituation, and attraction. The magnitude of the avoidance response may depend on a number of factors including the type, distance, movement pattern, speed, and duration of the disturbance; the time of day, time of year, weather; and the animal's access to food and cover, energy demands, and reproductive status (Fernández–Juricic et al. 2007; Gabrielsen and Smith 1995; Cole and Knight 1990). Habituation is defined as a form of learning in which individuals stop responding to stimuli that carry no reinforcing consequences for the individuals that are exposed to them

(Alcock 1993). A key factor for assessing how wildlife will respond to disturbance is the predictability of the use. Often, when a use is predictable—for example, when visitors stay on a trail, boardwalk, or viewing deck—wildlife will habituate to and accept human presence (Oberbillig 2000).

The impact of environmental education and interpretation, and the use and periodic maintenance of support facilities is expected to be adverse, but minor and localized, due to the relatively low level of anticipated use, the size of the Refuge, and stipulations imposed on the use. With stipulations described below, this use generally would result in negligible animal mortality; minor, short-term wildlife disturbance; localized compaction of soil and loss of vegetation; and no introduction of contaminants.

Long-term impacts

General Effects from Environmental Education and Interpretation:

The effects from environmental education and interpretation are expected to be minimal and in general are considered to be of low impact to wildlife and their habitats due to these activities occurring in controlled areas within the Refuge. Most uses addressed in this compatibility determination fall within one of two categories. The first group is the formalized school group or other scheduled activity that use established trails or classrooms designed to minimize impacts to the surrounding area. School groups and other scheduled groups are often accompanied by Refuge staff or other trained individuals. The second group is the largely secondary users that value environmental education and interpretation and related activities greatly, and participate in these uses regularly, but are more often visiting the Refuge for other primary purposes (i.e. hiking or bicycling). These visitors visit the Refuge in part to see wildlife and signs of wildlife and to learn more about them but would probably continue to hike or bicycle even if such secondary opportunities did not always arise. Impacts associated with non wildlife-dependent uses include such issues as littering, erosion and ground disturbance, or increased wildlife disturbance. These impacts are discussed in CDs for those activities.

Potential Impacts to Habitat:

Habitat effects associated with vehicle use on roads opened to the public are primarily vegetation loss and soil erosion. Seasonal vehicle restrictions on most unimproved roads within the Refuge minimize impacts to fish, wildlife and road conditions and ensure the wildlife-dependent uses which these road support remain compatible with the purposes for Kootenai National Wildlife Refuge.

The primary impact to habitat by visitors engaged in environmental education and interpretation is walking off road and the subsequent trampling of vegetation and the potential creation of social trails. Pedestrians can cause structural damage to plants and increase soil compaction and erosion (DeLuca et al. 1998; Whittaker 1978). However, over the past, no adverse long-term impacts have been observed.

Most invasive plants need some form of transportation to reach new areas (Trombulak and Frissell 2000). Several potential modes of transportation, or "vectors," continually travel throughout Kootenai National Wildlife Refuge in the form of vehicle traffic on roads, people, pets, wildlife, and tools and equipment taken onto the Refuge. However, such an impact to the Refuge by participants engaged in environmental education and interpretation would be considered minor.

Monitoring of public use in identified sensitive wildlife habitats would be used to determine if impacts from environmental education and interpretation could impact the health, vigor, or productivity of fish, wildlife, or their habitats in these areas. If such potential for impact is identified, the Refuge would increase public notification and education regarding those impacts and/or close the areas to public use for critical periods or longer if necessary.

Potential Impacts to Wildlife in General:

The long-term effects of wildlife disturbance are more difficult to assess but may include altered behavior, decreased vigor or productivity, or death of individuals; altered population abundance, distribution, or demographics; or altered community species composition and interactions. However, while impacts of the use can be serious for individual plants and animals and perhaps localized rare populations, they are generally of little significance to populations or species, landscape integrity, or regional biological diversity. Moreover, unless a localized, rare population is impacted by a single impacted site, the intensity, size, and distribution of impacts are not relevant to the significance of impacts assessed at large spatial scales (Cole 1989).

Potential Impacts to Cultural and Other Resources:

Portions of the Refuge are currently opened to public use, including hunting, fishing, wildlife observation, wildlife photography, environmental education, and interpretation. All recreation uses and activities are regulated and managed to avoid significant effect to biological integrity, diversity, and environmental health. The most noticeable disturbance effects occur along the network of maintained roads and trails which support recreation uses and activities within the Refuge. Due to the seasonality and relatively low number of visitors at a given time in these locations, we presume impacts to non-target wildlife, such as disturbance, displacement, and habituation, which have been well documented and studied in other areas (Cole, 2004; Cole & Knight, 1990), to be minor and short-term in nature from this activity. As such, it is also unlikely that this relatively low-use activity would negatively affect cultural resources. The possible threat of inadvertent collection of prehistoric artifacts would be further mitigated through outreach, education, and enforcement of Refuge regulations.

Mitigation of Potential Impacts:

To prevent or minimize these potential long-term impacts, Refuge staff would work to ensure that visitors follow stipulations through law enforcement, Refuge and volunteer presence, and various forms of outreach. Refuge staff and law enforcement

would regularly assess roads and trails for safety and quality of visitor experience, wildlife disturbance, and impacts to soil and vegetation. The Refuge would monitor road and trails for non-native invasive species and implement appropriate control measures. If use levels are resulting in unacceptable impacts to wildlife, habitat, visitor experience, cultural resources, or public safety, the use may be modified or relocated to prevent additional impacts and restore habitat.

Public Review and Comment

The draft compatibility determination will be available for public review and comment for 14 calendar days to provide comments following the day the notice is published. The public will be made aware of this comment opportunity through our social media outlets and letters to potentially interested parties. A hard copy of this document will be posted at the Refuge Headquarters at 287 Westside Road, Bonners Ferry, ID 83805. It will also be made available electronically on the Refuge website at https://www.fws.gov/refuge/kootenai/. Please let us know if you need the documents in an alternative format. Concerns expressed during the public comment period will be addressed in the final Compatibility Determination.

Determination

Is the use compatible?

Yes

Stipulations Necessary to Ensure Compatibility

- 1. Environmental education/interpretation activities not led by Refuge staff or volunteers will require, at a minimum, verbal approval by the Refuge Manager to minimize conflicts with other groups, safeguard students and resources, and to allow tracking of use levels. The Refuge Manager, at their discretion, may issue a Special Use Permit for groups less than 25.
- 2. Groups with 25 participants or larger must obtain a Special Use Permit.
- 3. The permittee and all associated personnel agree to conduct activities in a safe manner, in compliance with all Refuge regulations and policies, and with precaution to avoid damage to resources, property, or personnel. Refuge staff will not be held responsible for loss of, or damage to, equipment.
- 4. A copy of Special Use Permit must be in the permittee or associate's possession at all times while exercising the privileges of the Permit. A copy of the Permit must be shown to any USFWS employee or Federal law enforcement officer upon request.
- 5. Failure to abide by any part of the Special Use Permit; violation of any Refugerelated provision or Code of Federal Regulations; or violation of any pertinent

- State regulation (e.g., fish or game violation) will, with due process, be considered grounds for revocation of the permit and could result in denial of future permit requests for lands administered by the USFWS. This provision applies to all persons working under the authority of the permit
- 6. Youth educational groups are required to have a sufficient number of adults to supervise their groups.
- 7. Activities associated with the proposed uses are restricted to the auto tour, trails, observation blinds/platforms, photography blinds, parking lots/pullouts, and educational study sites during daylight hours throughout the year.
- 8. Activities requiring off road/trail access or access between sunset and sunrise or any collection of plants and animals would require a Special Use Permit or be managed by Refuge staff.
- 9. Directional, informational, and interpretive signs and publications will be posted and maintained to keep visitors on roads and trails as well as help educate the public on minimizing wildlife and habitat disturbance.
- 10. Refuge staff and volunteers will monitor uses to ensure compatibility, refine user estimates, and evaluate compliance. Potential conflicts between user groups will also be evaluated. The Refuge will maintain an active law enforcement presence to ensure visitor compliance with all Refuge rules and regulations.
- 11. Regulations will be available at information kiosks on site, through a refuge brochure, and will be posted on the Refuge website. Regulations are also available by contacting Refuge staff for information.
- 12. Regular maintenance of Auto Tour Route and environmental education and interpretation facilities will occur to ensure safety and productive intended uses.
- 13. The environmental education building may be scheduled for use seven days a week for activities during both daytime and evening, dependent on staff and facility availability.

Justification

The National Wildlife Refuge System Administration Act of 1966 (as amended) identifies environmental education and interpretation as two of six priority public uses on National Wildlife Refuges. The law states that, when managed in accordance with principles of sound fish and wildlife management and administration, environmental education and interpretation, and the other priority wildlifedependent recreational uses "have been and are expected to continue to be generally compatible uses." The Act further states that these priority public uses should receive enhanced consideration over other general public uses in Refuge planning and management, and directs the USFWS to provide increased opportunities for the

public to safely engage in traditional outdoor activities such as fishing and hunting.

Based on the stipulations outlined above, it is anticipated that wildlife populations will find sufficient food resources and resting places such that their abundance and use of the Refuge will not be measurably lessened as a result of allowing environmental education and interpretation on Kootenai NWR. The relatively limited number of individual animals expected to be adversely affected as a result of these uses will not cause wildlife populations to materially decline, the physiological condition and production of species present will not be impaired, their behavior and normal activity patterns will not be altered dramatically, and their overall welfare will not be negatively impacted. Based on available science and best professional judgement, the Service has determined that environmental education and interpretation at Kootenai NWR, in accordance with the stipulations provided here, will not materially interfere with or detract from the National Wildlife Refuge System mission or the purposes of the Refuge. Rather, appropriate and compatible environmental education and interpretation would be a use of the Kootenai National Wildlife Refuge through which the public can develop an appreciation for wildlife and wild lands.

Signature of Determination

Refuge Manager Signature and Date

Signature of Concurrence

Assistant Regional Director Signature and Date

Mandatory Reevaluation Date

2038

Literature Cited/References

Alcock, J. 1993. Animal behavior: an evolutionary approach. 5th ed. Sunderland, MA: Sinauer Associates.

Belanger, L. and J. Bedard. 1990. Energetic cost of man-induced disturbance to staging snow geese. Journal of Wildlife Management 54:36-41.

Cole, D.N. 1989. Some principles to guide wilderness campsite management. Pages 181–187 in: D.W. Lime, ed. campsite management and monitoring in wilderness. St. Paul, MN: Minnesota Extension Service and Minnesota Agricultural Experiment Station, University of Minnesota.

Cole, D. N. and R. L. Knight. 1990. Impacts of recreation on biodiversity in wilderness. Utah State University, Logan, UT.

Cole, D.N. 2004. Environmental impacts of outdoor recreation in wildlands. Pages 107–116 in: M.J. Manfredo, J.J. Vaske, B.L. Bruyerre, D.R. Field, and P.J. Brown, eds. Society and natural resources: a summary of knowledge. Jefferson, MO: Modern Litho.

DeLuca, T.H., W.A. Patterson, W.A. Freimund, and D.N. Cole. 1998. Influence of llamas, horses, and hikers on soil erosion from established recreation trails in western Montana. USA Environmental Management 22(2):255–262.

Fernández-Juricic, E., P.A. Zollner, C. LeBlanc, and L.M. Westphal. 2007. Responses of nestling black-crowned night herons (Nycticorax nycticorax) to aquatic and

terrestrial recreational activities: a manipulative study. Waterbirds 30(4):554-565.

Gabrielsen, G.W. and E.N. Smith. 1995. Physiological responses of wildlife to disturbance. Pages 95-107 in: R.L. Knight and K.J. Gutzwiller, eds. Wildlife and recreationists: coexistence through management and research. Washington, D.C.: Island Press.

Hammitt, W. E., D. N. Cole, and C. A. Monz. 2015. Wildland Recreation: Ecology and Management. 3rd Edition.

Kight, C.R. and J.P. Swaddle. 2007. Associations of anthropogenic activity and disturbance with fitness metrics of eastern bluebirds (Sialia sialis). Biological Conservation 138(1-2):189-197.

Miller, J.R. and N.T. Hobbs. 2000. Recreational trails, human activity, and nest predation in lowland riparian areas. Landscape and Urban Planning 50(4):227-236.

Miller, S.G., R.L. Knight, and C.K. Miller. 1998. Influence of recreational trails on breeding bird communities. Ecological Applications 8(1):162-169.

Morton, J.M., A.C. Fowler, and R.L. Kirkpatrick. 1989. Time and energy budgets of American black ducks in winter. Journal of Wildlife Management 53:401-410.

Oberbillig, D.R. 2000. Providing positive wildlife viewing experiences. Deborah Richie Communications. Missoula, MT.

Trombulak, S. C. and C. A. Frissel. 2000. Review of Ecological Effects of Roads on Terrestrial and Aquatic Communities. Conservation Biology, 14, 18–30.

USFWS. (U.S. Fish and Wildlife Service) 2011. Comprehensive Conservation Plan and Environmental Assessment for the Kootenai National Wildlife Refuge. U.S. Fish and Wildlife Service, Region 1, Portland, OR

Whittaker, P.L. 1978. Comparison of surface impact by hiking and horseback riding in the Great Smoky Mountain National Park. Management Report 24. U.S. Department of the Interior, National Park Service. 80 pp.

Figure(s)

Map of Kootenai National Wildlife Refuge.

