Seedskadee National Wildlife Refuge

Environmental Assessment

September 2001

Environmental Assessment

Tables

Chapter 1. Purpose, Need, and Issues

The purpose of this Environmental Assessment is to publicly disclose the possible environmental consequences that implementation of the Seedskadee NWR CCP could have on the quality of the physical, biological, and human environment as required by the National Environmental Policy Act of 1969. This assessment analyzes three levels of management intensity on Seedskadee NWR. The Preferred Alternative, the CCP, is an intensive habitat and wildlife management program alternative designed to incorporate science-based management practices and monitoring. The Preferred Alternative also emphasizes development of education, interpretation, and outreach opportunities. The No Action, or current management, alternative is science-based but narrower in scope than the CCP. The third Alternative maximizes wildlife benefits by focusing on habitat protection and describes a reduced public use approach.

The U.S. Fish and Wildlife Service (Service) recognized the need for strategic planning for all the components of its Refuge System, and in September 1996, Executive Order 12996 was enacted which gave the Refuge System guidance on issues of compatibility and public uses of its land. Later on, Congress passed the National Wildlife Refuge System Improvement Act in October 1997, which, for the first time in the Refuge System's history, required that Comprehensive Conservation Plans (CCP) be prepared for all refuges within 15 years. The CCP should describe how lands and wildlife will be managed, monitored, and evaluated to determine if the desired habitat and wildlife responses occur. The CCP must also address which wildlife-dependent recreation and visitor opportunities are compatible and appropriate. The planning process also provides opportunities for the public and State and Federal agencies to provide input.

The CCP is intended to provide long-range guidance for the management of Seedskadee NWR based on careful consideration of the physical and biological characteristics of the land base. It is designed to further achieve the U.S. Fish and Wildlife Service and National Wildlife Refuge System missions and Seedskadee's goals and objectives which emphasize the protection and enhancement of wildlife and their habitats. Refer to Chapters 1, 2, and 3 of the CCP for background information, a description of the planning process and a description of Refuge resources.

Chapter 2. Management Alternatives

Several alternatives were considered when developing the EA. One of the alternatives that was discussed but was eliminated from the detailed analysis is discussed below.

Maximized Public Use Alternative
This alternative would have developed the Refuge as a recreational area. All areas would have been opened to the public and many new facilities would have been built. Development might include multiple hiking trails, parking lots, two additional boat ramps, campgrounds, and a fishing pond facility. This alternative was not analyzed in detail because it conflicts with the Refuge purpose of serving as a refuge and breeding ground for migratory birds and other wildlife and the intent of the National Wildlife Refuge System Improvement Act, putting wildlife first.

Alternative 1 Current Management Continues (No Action)

Under the No Action Alternative, the current management direction would continue. The emphasis is on management of existing wetlands and additional wetland creation and enhancement. Wetlands are managed primarily to provide shallow wetland habitat for migratory birds (waterfowl, shorebirds, and wading birds) and more permanent water for waterfowl production. To the extent other Refuge resources are available, riparian and upland wildlife habitats are protected and managed to benefit native and migratory species. Minimal monitoring of migratory and resident wildlife populations occurs. No habitat monitoring or monitoring of management activities occurs with the exception of the efficacy of weed control efforts.

Public use opportunities are focused on wildlife-dependent public uses. Facilities are few and largely primitive. Accessible restrooms are located at Refuge headquarters. Travel is restricted to existing designated roads. Most roads are primitive and infrequently maintained. An auto-tour route exists near the Headquarters. There are no developed interpretive trails. Interpretive panels are located at Refuge headquarters and one is located at the Hawley overlook. Simple brochures provide information on the Refuge, regulations, hunting and fishing, the area history, and watchable wildlife.

Alternative 1 A. Wildlife

Alternative 1 A1. Goal: Threatened and Endangered Species

To restore, enhance, or protect threatened and endangered flora and fauna that currently occur or have historically occurred in the area of Seedskadee NWR.

1. Management for threatened and endangered, candidate, and species of special concern consists primarily of habitat protection, protection of individuals from disturbance, providing adequate food resources and some population monitoring. Populations of bald eagles are the only federally-threatened species using the Refuge which are monitored each year. Observations of any special status species are recorded in the Refuge database. When necessary, special regulations and closures are instituted for protection of wildlife species and their habitat on the Refuge.

Alternative 1 A2. Goal: Wildlife

Preserve, restore, and enhance the ecological diversity and abundance of migratory and resident wildlife with emphasis on native species.

1. Management of trumpeter swans consists primarily of managing the Hawley wetland unit to provide nesting habitat, protection of individuals from disturbance, providing adequate food resources and some population monitoring. The Refuge cooperates with WYG&F in the reestablishment of the Rocky Mountain Population of trumpeter swans.
2. Management of moose and mule deer populations consists of setting harvest objectives in conjunction with the WYG&F. There is no monitoring of grazing impacts to habitats. WYG&F conducts aerial surveys to estimate populations.
3. Management of sage grouse consists primarily of protection of habitat from domestic livestock grazing and off-road vehicle travel. There is no population monitoring or evaluation of habitat conditions.
4. Management of habitat for migratory birds consists of maintaining and enhancing existing managed wetlands, and the protection of riparian, upland and riverine habitats. Waterfowl surveys are conducted bi-weekly in the fall. Waterfowl nest production is monitored every 3 to 5 years.
5. Management for other indigenous wildlife species consists of protection and enhancement of existing habitats. Predators and furbearers are managed to reduce these species impacts to riparian vegetation and ground-nesting birds.
6. When necessary, special regulations and closures are instituted for protection of wildlife species and their habitat on the Refuge.

Alternative 1B. Habitat

Alternative 1 B1. Goal: Riparian

Protect and restore riparian habitats along the Green River to provide for the annual life needs of migratory birds and native wildlife utilizing the Green River Basin.

1. Approximately 40 cottonwood groves occur on terraces along the Green River and another 15 or so on islands. A riparian restoration pilot project was conducted to determine potential success of restoration and enhancement of woody riparian species and management prescriptions. Restoration includes an emphasis on woody species planting. Planting of understory woody shrubs may occur in up to nine randomly selected sites based upon the results of the pilot project. Riparian restoration research will continue through 2002 and recommendations to protect and restore this habitat will be available in 2003.
2. No monitoring wells are installed to determine the groundwater levels.
3. The flow regime for the Green River through the Refuge is managed by Reclamation for its project purposes and consistent with downstream water rights and commitments.
4. Monitoring of the impacts of browsing by native wildlife is not conducted. Control of native wildlife that browse on woody plants (deer and moose) is coordinated with WYG&F with the objective of providing hunting opportunities and to reduce over browsing. A special hunt for mule deer occurs outside the regular season to reduce their numbers. Beaver activity is monitored annually and plant barriers and trapping are used to deter browsing. Livestock grazing is not allowed or used in riparian areas. Livestock removal is conducted on an as-needed basis. Surveys of the boundary fences are conducted about two times per year or as time and staff permit.
5. Prescribed fire has been used in the past in an attempt to rejuvenate decadent willows in the riparian area. Present management uses fire infrequently to manage invasive species.
6. Monitoring data were collected for three years on avian productivity and survivorship in riparian forest habitats. There is no regular ongoing monitoring program specific to riparian forest communities and their habitats.

Alternative 1 B2. Goal: Wetland

Wetlands will be managed to meet the breeding and migratory requirements of waterfowl, shorebirds, wading birds, and other wetland dependent species.

1. Three oxbow wetlands have been restored in the McCullen Bluff, Hamp, and Hawley Units through diversions into side channels. Wetlands have been created and enhanced through development of impoundments (dikes and water control structures) in the Hamp, Hawley, Lower Hawley, and Dunkle Units. Further mitigation for loss of wetland emphasizes restoring historical, enhancing existing, and creating new wetlands. One additional managed wetland complex would be developed in the Pal Management Unit.
2. One additional rock sill would be installed to divert water from the Green River into historic side channels and restore associated wetland habitat. Natural topography would be used to minimize soil disturbance and alterations to natural features.
3. Existing wetlands units (Hamp, Hawley, and Dunkle) are managed to provide migratory and breeding habitat for waterfowl, shorebirds, and wading birds. A Water Management Plan is applied and modified as necessary to provide shallow wetland habitats for spring and fall migration and deeper wetland habitats for breeding and brood-rearing areas.
4. Predators and beaver are controlled under the direction of an approved Predator Management Plan. Management trapping by Refuge staff occurs in the Hawley and Dunkle units for mammalian nest predators during waterfowl nesting season. Beaver are removed when significant damage occurs to cottonwoods or water management infrastructure. Animals are live-trapped where possible. Some trapping permits are issued for management purposes.
5. Little monitoring of wildlife use occurs. Waterfowl production monitoring occurs every 3 to 5 years. No vegetative monitoring occurs.

Alternative 1 B3. Goal: Uplands

Preserve, restore, and enhance the ecological diversity of indigenous flora associated with the Great Basin upland desert shrub and grassland habitats to support native wildlife found in the Green River Basin.

1. Upland areas are fenced, but not intensively managed. Grazing and prescribed fire have not been used as a management tool. No monitoring occurs in the upland habitats.

Alternative 1 B4. Goal: Riverine

The Refuge staff, in collaboration with Wyoming Game and Fish Department and Reclamation, will manage water quality and quantity in the Green River to maintain and/or restore the riparian and cottonwood forests and provide habitat for waterfowl, trumpeter swans, fish, and other native species dependent on river and forested habitat.

1. No significant native fishery exists in this section of the Green River. Management of the cold-water (sport) fishery is generally left up to the WYG&F. The Refuge occasionally assists with habitat improvements for fisheries. No opportunities exist to restore endangered Colorado River fishes in this stretch of the Green River due to the presence downstream of Flaming Gorge dam and lack of suitable habitat.

Alternative 1 B5. Goal: Invasive Species

Restore and maintain indigenous flora diversity by controlling the invasion of exotic plant species on the Refuge.

1. The weed control efforts are targeted to small, spreading infestations and to preventing existing large populations from seeding. Pepperweed has been aggressively treated starting at the north boundary of the Refuge and working south. An integrated approach is used (the Refuge's Draft Integrated Pest Management Plan); however, chemical control is generally the only effective method available for many species. Some biological control agents have been released on the Refuge. The University of Wyoming is currently researching long-term sustainable methods to remove pepperweed from Refuge lands.

Alternative 1 C. Public Use , Recreation, and Resource Protection

Alternative 1 C1. Goal: Wildlife-Dependent Recreation

Nurture an understanding of and appreciation for wildlife and other natural resources of the Green River Basin by providing opportunities for compatible wildlife-dependent recreation while maintaining the primitive, uncrowded nature of the area.

1. A comprehensive wildlife observation guide is available to assist the visitor. Using the existing road system, Seedskadee NWR provides a 9-mile-long seasonal wildlife auto-tour route. Several pullouts have been developed but do not have interpretive signs. An overlook with interpretive signs is provided at the developed Hawley wetland unit near Refuge headquarters.
2. The Headquarters public rest room is universally accessible. Accessibility would be a high priority in developing new facilities and public use opportunities.
3. All vehicle travel, including bicycles, are restricted to existing designated roads. All-terrain-vehicles and vehicles not licensed for highway driving are not permitted on the Refuge. Vehicle access through fences is provided by cattle guards and is limited to existing designated roads. Seventy-seven miles of designated roads are open to public travel (Map 9). Two-track spur roads are closed to protect resources. Closed two-tracks are allowed to naturally revegetate. Parking is informal along existing designated roads and occurs haphazardly.
4. All areas are open to foot travel. Cross-over structures are provided for foot access across Refuge fence.
5. Seedskadee NWR partners with WYG&F to manage hunting. The Refuge hunting plan was completed in 1986 and is updated annually. Hunting is allowed except in two areas. The administration area around the houses and office is closed to all regular hunting. The Dunkle and Sagebrush managed wetland units are closed to waterfowl hunting. The entire River is open to hunting. Only portable blinds or blinds constructed from dead, downed wood may be used. Cutting of standing live or dead vegetation or digging pit blinds are prohibited. Portable blinds, tree stands, and decoys must be removed daily.
6. The Green River is managed by the WYG&F as a trophy trout fishery from the CCC bridge downstream to the confluence of the Big Sandy, and State regulations apply. Boating is allowed on the River through the Refuge. Most use is by non-motorized watercraft. The Refuge provides four boat launch sites and associated parking areas. Recreational fishing is unlimited.
7. “Take A Kid Fishing Day” is one of the principal outreach activities for the Refuge.

8. Commercially guided floats are allowed from the north boundary to the 6 Mile Hill boat ramp (just south of Big Sandy confluence) through issuance of fee permits. Fee permits are issued on an annual basis only. Through attrition, the Service will reduce the number of permits to 4 or less. The season is from April 1 to October 30 of each year. The number of boats per day/outfitter and the number of boats per day/section of River is limited. Daily use is first-come, first-serve and coordinated via a telephone answering service; and use can be provided for both fishing and scenic tours. Use data are required from permitted guides; however, formal monitoring of recreational use is not conducted by the Refuge.
9. The Refuge is closed after dark. No camping is provided on the Refuge. Visitors are directed to overnight facilities located outside the boundary of the Refuge.
10. Visitor use levels are low and not limited except for commercial use on the Green River which has been set at a low level.

Alternative 1 C2. Goal: Environmental Education and Interpretation

Educate and inform the public about the Refuge, the U.S. Fish & Wildlife Service, The National Wildlife Refuge System, and the Upper Colorado Ecosystem by providing quality environmental education and interpretation opportunities.

1. Current interpretive resources include: historical and biological interpretive exhibits at the headquarters, a portable exhibit for interpretive outreach, an information kiosk near headquarters, and two interpretive signs at the Hawley Wetland Overlook ("Waterfowl in a Dry Land" and "Cattails and Sagebrush"). In addition to these, two interpretive panels are located inside the Refuge headquarters (i.e., "Welcome To Seedskadee" and "Kids Corner").
2. No interpretive trails exist on the Refuge.
3. Upon request, the Refuge staff provides tours to schools, civic groups, and other organizations. The Refuge staff conducts activities on Migratory Bird Day and Take a Kid Fishing Day. Environmental Education is integrated with recreational opportunities. No facilities or developed programs are available, and little outreach is dedicated to environmental education.
4. Lombard Crossing historical display is accessible.

Alternative 1 C3. Goal: Resource Protection

Protect Refuge resources from adverse natural and/or man-made impacts.

1. The primary public use brochure (Seedskadee NWR travel map and general information) contains a map of the Refuge showing designated roads and facilities, and explains Refuge regulations and resources. This brochure is available at the headquarters, at 15 primary entrance locations, the WYG&F, Farson visitor center, and Green River/Rock Springs Chamber of Commerce.
2. The Refuge staff makes available hunting and fishing regulations and access information (parking, road closures, hunting closures, ORV regulations, opportunities for people with disabilities).
3. Known River hazards are posted.
4. Directional signs are provided on most of the Refuge to help guide visitors along designated roads. A recent road numbering system was installed along roads in the north section of the Refuge to help protect habitat and reduce off-road vehicle use. This system will eventually be installed in the south end of the Refuge. Additional signs will be installed, especially in the southern reaches of the Refuge to facilitate the visitors experience and reduce impacts to resources.
5. No monitoring of public use occurs except for use by commercial operations.
6. The remaining five acres of privately held land within the Refuge boundary would be purchased when there is a willing seller. No additional new lands would be acquired. No lands would be disposed.
7. Surface use is subject to Refuge approval and stipulations.
8. Several rights-of-way and easements currently exist within the Refuge. Rights-of-way are reviewed and approved on a case-by-case basis.
9. The Refuge has a Fire Management Plan and an Interagency Dispatch Plan. All wildfires are suppressed using the "closest forces concept" and appropriate suppression strategies. A cooperative agreement for fire suppression exists with local, State, and other Federal agencies in the area.
10. Law enforcement is conducted year-round as staff and time permit and in response to emergencies and information tips.
11. Access to water for livestock is provided to Rock Springs Grazing Association permit holders according to deeded reservation. Access may be via watering lane (water gap), off-site water development or via a Refuge special use permit. Access is also provided as a courtesy to other BLM permit holders through fenced livestock watering lanes (17 water gaps). Existing water gaps are maintained solely at Refuge expense.
12. A single reservation exists on the Refuge for a livestock holding pen and for a calving area at the south end of the Refuge. These would be managed under a Special Use Permit. No permitted grazing is currently ongoing on the Refuge.
13. Livestock trespass occurs; enforcement of trespass is difficult. Boundary fencing is used to exclude livestock but fences are sometimes cut. Trespass occurs largely through watering lanes. Three water gaps need additional rock installed to be considered complete.

Alternative 1 C4. Goal: Cultural Resource

Protect and interpret significant historic and prehistoric cultural sites and objects associated with Refuge lands.

1. Cultural resource protection is largely reactive. The Refuge complies with section 106 of the National Historic Preservation Act. If an undertaking could result in an effect on a significant cultural resource, the Refuge consults with the State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (ACHP). The Refuge staff also consults with the SHPO to assess information needs, locate properties, and to make determinations of eligibility. A cultural resource overview exists for the area (People of the Sage). Little direct protection/stabilization occurs for historic sites.
2. Interpretation of the cultural history of the area is largely limited to the historic period. An interpretive site was constructed at Lombard Ferry site. The site features five interpretive signs, a graveled parking area, and a paved pedestrian path. A replica of the Lombard Ferry was donated to the Refuge and placed at the site. A trail will be constructed to the Ferry in 2001 using Reclamation funding and support from the Mormon Church. The FWS has an interest in interpreting Native American history of the surrounding area. A historical leaflet is available which interprets local and national history of westward expansion and settlement of the area.

Alternative 1 C5. Goal: Partnership

Foster partnerships to promote wildlife conservation and habitat management in the Green River Basin and to help Seedskadee NWR accomplish its vision and goals.

1. Cooperation with Reclamation, WYG&F, and BLM continues. Refuge staff conducts ongoing volunteer programs involving student interns, retired persons, community support, and local scout groups.
2. The Refuge participates in the Partners for Wildlife Program for habitat improvement on private lands and Partners in Flight Program for protection and monitoring of migratory birds. The Refuge also has the lead in the Green River Focus Area of the Intermountain West Joint Venture: a cooperative venture with other Federal agencies and with private landowners in the Green River Basin.
3. Locally, the Refuge partners with Trout Unlimited on restoration projects on the Big Sandy River and assists local chamber of commerce groups by providing information for tourism.
4. The Refuge would participate in other neighboring Federal, State and local planning processes.

Alternative 2 (Proposed Action)

Management emphasis would be on restoring riparian function and forest health, restoring historic wetlands types, and enhancing wetlands. The Refuge would be managed for a mix of wetland, riparian, and upland habitats to benefit migratory birds and other native and migratory species as well as threatened, endangered, candidate, and species of special management concern.

Existing wetland units would be managed to provide migratory habitat and incidental breeding habitat. Riparian (floodplain) forest habitat would be restored through a variety of management activities. Limited management would occur in upland habitats. Efforts at cooperative management would be aggressively sought. Monitoring would include long-term habitat change, selected wildlife with an emphasis on migratory birds, threatened and endangered species, public use, and effects of management activities.

Public use opportunities would include wildlife-dependent public uses. In addition, opportunities would be coordinated with other recreational opportunities in the general area such as the Green River Basin. The experience would be largely primitive. Closure and restoration of non-designated roads to protect habitats would be a priority. Additional facilities would be allowed where they support and enhance wildlife-dependent activities or where resource protection or sanitation would be necessary. Facilities and programs would be universally accessible. Opportunities for environmental education and interpretation would be expanded.

Alternative 2 A. Wildlife

Alternative 2 A1. Goal: Threatened and Endangered Species

To restore, enhance, or protect threatened and endangered flora and fauna that currently occur or have historically occurred in the area of Seedskadee NWR.

1. Management of threatened and endangered species would: continue habitat protection, protection of individuals from disturbance, and providing adequate food resources; expand monitoring to include populations and habitat; and allow active habitat management where necessary. Regular monitoring of populations of threatened and endangered, and candidate species and selected species of management concern using the Refuge would occur regularly. A survey of available habitat and habitat quality for all species with potential to use the Refuge would also occur.
2. Surveys would be conducted for Ute ladies'-tresses orchid and its suitable habitat every 5 to 10 years or if current River management flows are changed. Recent surveys (1999) did not detect this species.
3. When necessary, special regulations/closures would be instituted for protection of wildlife species and their habitats on the Refuge.

Alternative 2 A2. Goal: Wildlife

Preserve, restore, and enhance the ecological diversity and abundance of migratory and resident wildlife with emphasis on native species.

1. The Refuge would continue to expand cooperative efforts with WYG&F, the Trumpeter Swan Society, and the Refuge Trumpeter Swan Working Group to improve habitat for the Rocky Mountain population of trumpeter swans. The goal would be to provide breeding habitat for 2 to 3 pairs of trumpeter swans in the Hawley, Hamp, and Pal Units. Efforts would be to minimize disturbance to wintering swans via seasonal closures.
2. Management of moose and mule deer populations consists of setting harvest objectives in conjunction with the WYG&F. Vegetation transects would be initiated to monitor grazing impacts to habitats and success of harvest management strategies. The WYG&F conducts annual aerial surveys to estimate populations.
3. Monitoring of sage grouse habitat and populations will be initiated to evaluate the Refuges contribution to local populations. Habitat will be protected from domestic livestock grazing and off-road vehicle travel.
4. Management of habitat for migratory birds and other indigenous wildlife species is similar to Alternative 1.
5. When necessary, special regulations and closures are instituted for protection of wildlife species and their habitat on the Refuge.

Alternative 2 B. Habitat

Alternative 2 B1. Goal: Riparian

Protect and restore riparian habitats along the Green River to provide for the annual life needs of migratory birds and native wildlife utilizing the Green River Basin.

1. Emphasis for mitigation work during this planning cycle would be on restoring, if possible, the dynamic functioning of the Green River and adjacent floodplain forests.
2. A long-term riparian restoration plan based on site specific research would determine effective methods to establish new age classes of woody plant species and restore health to the riparian system. Strategies from that plan would be implemented in a multi-year restoration effort.
3. If feasible and effective (based on research), regeneration of cottonwoods and willows may be achieved on new sites created by increased water availability through manipulated river flows and/or irrigation. Some pole planting may occur at up to 10 suitable sites. Sites for restoration may include the: McCullen, Tallman, Hamp, Pal, Dunkle, Otterson, Johnson, and Big Island management units. Planting of understory shrubs would occur in up to five areas with adequate groundwater. Temporary exclosures may be used to deter browsing.
4. Wells would be installed to monitor groundwater depth and changes in depth in the riparian zone. This information would be used to select sites for restoration efforts.
5. The long-term riparian restoration plan would include a prescriptive flow regime for the Green River through the Refuge to increase the vigor of existing cottonwood/willow communities and to increase riparian regeneration. The flow regime would be proposed to Reclamation; the needs of other affected interests would be integral to the prescription. Implementation would be coordinated with other water uses such as sport fisheries, hydropower generation, and flood control.
6. An agreement would be sought to provide long-term flow regimes geared toward maintenance and regeneration of the riparian plant community.
7. Wildlife would be aggressively managed during the restoration phase to reduce populations of species on the Refuge that heavily browse riparian woody plants (deer, moose, and beaver). Exclosures may be constructed in selected areas to protect regeneration and allow for vegetative recovery.
8. Livestock grazing would not be allowed or used in riparian areas except for habitat management purposes. Fences would be regularly maintained to exclude livestock and trespass laws would be strictly enforced.
9. Work with Reclamation to continue mitigation funding for restoration of riparian willow and cottonwood forests until such as time as the decline of this habitat is reversed and the health of the system improves.

10. Fire would not be used in floodplain forest habitats as long as cottonwoods in those habitats were in poor vigor and not reproducing. Fire may be used in non-forested habitats (shrub or grass/herbaceous vegetation types of the floodplain/lower terraces) to rejuvenate decadent stands of vegetation or control invasive species.
11. A long-term habitat monitoring plan for riparian forested communities including monitoring of "browse transects" would be designed and implemented to determine the success of management activities and the achievement of objectives including growth and vigor of woody plants and their utilization by wildlife. Monitoring Avian Productivity and Survival (MAPS) surveys would occur as necessary for management.

Alternative 2 B2. Goal: Wetland

Wetlands will be managed to meet the breeding and migratory requirements of waterfowl, shorebirds, wading birds, and other wetland dependent species.

1. Similar to Alternative 1, except wetland development would restore and/or enhance existing wetlands or former wetland types. The existing wetlands in the Pal Management Unit would be enhanced to provide migratory habitat. Development would include little alteration of natural features and use low-head dikes to impound water. Inflow would be passive (gravity flow).
2. A combination of seasonal and permanent water flows would be restored to suitable sites in one to two old river channel (oxbows) by constructing rock sills in the Green River.
3. The Hamp, Hawley, and Pal Units would be managed for breeding and migratory habitat. The remaining wetland units would be managed principally as migratory bird habitat for waterfowl, shorebirds, and wading birds. Wetlands would also be managed to benefit other wetland dependent species.
4. For seasonal/temporary natural wetland areas, management/ maintenance would be through natural river flows and flooding.
5. A Water Management Plan would be applied and modified as necessary to provide shallow wetland habitats for spring and fall migration, and breeding and brood-rearing habitats during summer. Such management would be applied in the Hamp, Hawley, Dunkle, and Pal wetland units. Water management would be varied and mimic natural wet/dry cycles to maintain habitat productivity and diversity while minimizing disturbance to wildlife.
6. Management trapping by Refuge staff for nest predators would occur in Hamp, Hawley, Dunkle, and Pal units.
7. Prescribed fire may also be used in emergent wetlands to maintain open water or to rejuvenate decadent stands of vegetation such as grasses.
8. Vegetative recovery and the kinds and numbers of wildlife species using wetland units, restored oxbows, and natural wetlands would be monitored. Waterfowl production will be monitored once every 3 to 5 years.

Alternative 2 B3. Goal: Uplands

Preserve, restore, and enhance the ecological diversity of indigenous flora associated with the Great Basin upland desert shrub and grassland habitats to support native wildlife found in the Green River Basin.

1. Existing stands of tall sagebrush in woody draws would be protected from unplanned disturbance. Small burns with associated monitoring to determine results may occur in greasewood stands to convert them to an early successional state and increase species diversity of grasses and forbs.
2. Habitat management and protection for wildlife species of management concern, such as prairie dog colonies, mountain plover, burrowing owl, and pygmy rabbit, would occur.
3. Fences would be regularly maintained. No domestic livestock grazing would be allowed.
4. Upland vegetation would be sampled to determine distribution, age class, structure, and species composition prior to any treatment.
5. A long-term habitat monitoring program would be instituted in the three upland habitat types to determine effects of management. Distribution and abundance of wildlife species of management concern would be monitored.

Alternative 2 B4. Goal: Riverine

The Refuge staff, in collaboration with Wyoming Game and Fish Department and Reclamation, will manage water quality and quantity in the Green River to maintain and/or restore the riparian and cottonwood forests and provide habitat for waterfowl, trumpeter swans, fish, and other native species dependent on river and forested habitat.

1. Similar to Alternative 1, except that the Refuge would seek closer coordination of management activities and habitat improvements with the WYG&F.

Alternative 2 B5. Goal: Invasive Species

Restore and maintain indigenous flora diversity by controlling the invasion of exotic plant species on the Refuge.

1. The Refuge would decrease dependence on chemical control of plants; increase, where possible, biological and other means of control as they become available. The Refuge would support, where possible, current research on biology and effective control of target species.
2. Refuge staff would more aggressively implement a program to prevent the spread of weeds and new introductions. The Refuge would partner with Reclamation and BLM to develop and implement a control program for salt cedar infestations occurring on lands upstream of the Refuge.
3. Convert fields of tall whitetop in Headquarters area to a mix of grasses and forbs common to area and consistent with cultural practices and IPM techniques.

Alternative 2 C. Public Use, Recreation ,and Resource Protection

Alternative 2 C1. Goal: Wildlife-Dependent Recreation

Nurture an understanding of and appreciation for wildlife and other natural resources of the Green River Basin by providing opportunities for compatible wildlife-dependent recreation while maintaining the primitive, uncrowded nature of the area.

1. Similar to Alternative 1; however, existing improved roads will be maintained on a regular basis. Parking areas will be provided and signed along all designated roads.
2. Two-tracks and trails identified which currently enter sensitive areas and compromise important wildlife habitat, and two-tracks and other roads determined unnecessary for Refuge management, would be closed and reclaimed. Sixty-five miles of designated roads will be open for public travel (Map 10). Of the 65 miles of open roads, 5.4 miles will be seasonally closed every year from November 15 through March 15 to reduce disturbance to wintering wildlife (Map 10). As appropriate for wildlife protection or road conditions, other roads may be seasonally or temporarily closed. All refuge lands will be open to foot travel.
3. Eleven pullouts would be enhanced along improved roads (auto tour routes) to provide wildlife and habitat viewing site opportunities.
4. One universally accessible nature interpretive trail (near headquarters) would be constructed to offer wildlife viewing/ photography opportunities in major habitats to a complete spectrum of people of various ages and abilities. The trail would have designated accessible parking. No vehicular use would be allowed on trails.
5. An accessible pit toilet would be installed at Dodge Bottoms.
6. Selected species (large antlered moose and deer) would be managed for enhanced wildlife viewing opportunities.
7. Similar to Alternative 1, a comprehensive wildlife observation guide would be available.
8. Special youth activities oriented toward wildlife observation and photography would be established.
9. Similar to Alternative 1, hunting would be a priority public use. Most of the Refuge would be open for game bird, waterfowl, small and big game hunting subject to specific closures or regulation for public safety or resource protection. A new closed area would be established via a separate public process. The closed area would include wetland and riverine habitat and would replace the existing closed areas. Barring the establishment of a closed area on Riverine habitat, the Refuge would explore closure of the waterfowl season on December 1 to reduce disturbance to wintering wildlife.
10. Efforts would be made to provide hunting opportunities for people with disabilities.
11. Duck blinds would be allowed (similar to Alternative 1).
12. Decisions on hunting would be influenced by habitat (controlling browse pressure), public use, watchable wildlife needs, and other considerations and would be coordinated with the WYG&F. A fishing and hunting leaflet for the Refuge would be enhanced and professionally printed.

13. Boat launches and parking would continue to be improved. Four designated boat ramps (River at Dodge Bottom, Hay Farm, Highway 28, and 6 Mile Hill) will have cable create installed to improve boat launching. Boat launching would be restricted to developed launches. Road-side pullouts would be delineated for bank anglers in high use areas. Universal access rest rooms would be provided at Dodge Bottoms and the headquarters. River access by vehicle would be limited to designated roads and small improved pullouts. Livestock access lanes will be enhanced by designating parking areas and increased signing to reduce conflicts between livestock and recreationists.
14. Efforts would be made to provide fishing opportunities for people with disabilities.
15. Commercially guided floats would be regulated similar to Alternative 1. Sections of the River through the Refuge may be closed to guided fishing in the future to avoid crowding.
16. Recreational use would be monitored. Use limits and seasonal closure may be instituted if visitor use levels increase to a level which disturbs wildlife, cause resource impacts, or exceed visitor tolerances.
17. The Refuge would cooperate with the WYG&F to create a no-wake zone/restrictions through the Refuge.
18. An interagency River Management Plan would be prepared and implemented to coordinate River use on the Green River among agencies and provide a range of recreational opportunities over the length of the River.
19. Visitors would be provided information on user safety, on who to notify in case of a medical emergency, and on the potential for slow emergency response due to the distance from emergency care providers.

Alternative 2 C2. Goal: Environmental Education and Interpretation

Educate and inform the public about the Refuge, the U.S. Fish & Wildlife Service, The National Wildlife Refuge System, and the Upper Colorado Ecosystem by providing quality environmental education and interpretation opportunities.

1. Quality interpretive sites on the ecology of Green River and its associated resources, Refuge purposes, issues of concern and other related information would be developed, in partnership with WYG&F at five pullouts along the auto tour route.
2. Interpretive themes at headquarters/visitor center would be carried through the Refuge with signs, overlooks, and tour guide/information brochures.
3. One nature interpretive walking trail (headquarters), one river/floater's interpretive trail, and one cultural trail at the Lombard Ferry site would be developed to educate and inform visitors about the natural and cultural resources found within the Refuge and the importance of riparian areas in the arid west.
4. Interpretive information would be made accessible to all. Existing interpretive signage would be updated.
5. Environmental education emphasis would be on the Refuge's unique resources, riparian systems and their importance to wildlife in the Green River ecosystem. To encourage environmental education independent of the Refuge staff, the staff would conduct a minimum of two on-site teacher training workshops on the Green River and Refuge resources. Opportunities to partner with WYG&F for these workshops would be pursued.
6. An environmental education curriculum package for one wildlife interpretive trail would be developed with assistance from local educators.
7. An environmental education/visitor facility would be constructed next to the headquarters. The facility would be designed and built to 'blend' with the landscape and have an interpretive display area and classroom/demonstration space for up to 30 to 35 students. A fee may be charged for exclusive third party use of the facility.

Alternative 2 C3. Goal: Resource Protection

Protect Refuge resources from adverse natural and/or man-made impacts.

1. The Refuge brochures would be updated and a more detailed travel map produced. Refuge and River use guidelines and regulations would be posted at Refuge entrances, along roads, and at popular public use areas, e.g. boat ramps. Visitors would be provided information on user safety, who to notify in case of a medical emergency, and on the potential for slow emergency response due to the distance from emergency care providers.
2. Directional signs would be added or improved. Road closed signs and other information would provide statements about why closures would be made.
3. Segments of Refuge lands not currently fenced will be evaluated and, where feasible, will be fenced. Segments of current fence which are not "antelope friendly" will be modified to comply with antelope fencing recommendations.
4. The Refuge staff would conduct an active outreach/public relations program establishing relationships with and providing information to State and local governmental officials, neighboring communities, appropriate organizations and interest groups, and State and local media outlets.
5. Cluster facility development in the northwest quadrant of the Refuge and leave the remainder of the Refuge in a primitive and semi-primitive condition.
6. The remaining five acres of privately held land within the Refuge boundary would be purchased if there were a willing seller similar to Alternative 1. Other lands would be considered for acquisition on a willing seller basis if information indicated that additional acres were necessary for management of selected species (for example, threatened and endangered species) or for mitigation purposes. Such areas may include upstream riverine riparian areas, especially between Fontenelle Reservoir and Big Piney or lands surrounding the Big Sandy River. Any additional land acquisition or disposal would go through a public involvement process and be on a willing seller basis only.
7. No lands would be disposed of unless in a trade with another Federal agency to further Refuge purposes.
8. Mineral exploration and development would be allowed only for privately-owned minerals and under surface use stipulations designed to maximize protection of wildlife, stabilization of soils, and restoration of disturbed vegetation; as well as to minimize adverse effects to the Refuge visitor's experience.
9. No surface occupancy would be allowed for access to privately-owned minerals if they may be otherwise reasonably accessed.
10. Rights-of-way would be reviewed and approved on a case-by-case basis. A right-of-way through the Refuge would be denied if feasible alternative routes were available. If no alternative route were available, restrict right-of-way to existing utility corridors with Refuge stipulations.
11. Subject to valid existing rights, access to water for livestock would be provided in designated watering lanes only.
12. Providing access to RSGA to water livestock would continue as outlined by the warranty deed. (similar to Alternative 1)
13. Law enforcement would be conducted year-round (similar to Alternative 1). Livestock trespass laws will be strictly enforced.

Alternative 2 C4. Goal: Cultural Resource

Protect and interpret significant historic and prehistoric cultural sites and objects associated with Refuge lands.

1. Similar to Alternative 1; however, the strategy would largely be proactive. The Refuge would comply with Sections 106 and 110 of the National Historic Preservation Act. Known cultural resource sites and potential sensitive areas would be avoided when practical. Adverse effects to sites would be mitigated.
2. The Refuge would obtain data and produce a cultural resource overlay (i.e. map) for its spatial resource information database (GIS) for internal use and avoidance/protection of cultural resources.
3. Significant historic sites would be thoroughly recorded.
4. Interpretation would be based on a unifying theme of people's relationship to and use of the habitat and wildlife in the Green River Basin over time including historic and prehistoric use. The Refuge staff would interpret nationally significant historic sites including Lombard Ferry, the Oregon/Mormon National Historic Trails, and Pony Express Trails and their crossings, Jim Bridger's Trading Post, and locally significant homesteads site. Interpretation of the Lombard Ferry would be incorporated into the existing site. Interest in interpretation of Native American history would be maintained.
5. The historical leaflet would be updated as new information becomes available. Information on prehistoric use of the area would be developed in a variety of formats, including indoor and outdoor exhibits, and leaflets. Sites discussing the use of local plants and animals by people through time would inform visitors of the importance of plants and animals in the human history of the area.
6. A floater's interpretive trail and River guide would be developed to inform and educate River users about natural and cultural resources of the Green River.

Alternative 2 C5. Goal: Partnership

Foster partnerships to promote wildlife conservation and habitat management in the Green River Basin and to help Seedskadee NWR accomplish its vision and goals.

1. Cooperation with Reclamation, WYG&F, and BLM continues, and the Refuge staff would actively seek additional volunteer assistance from local organizations, retired persons, and user/interest groups.
2. The staff would encourage and support the development of a local "Friends" organization or other cooperative association to support Refuge goals and assist in future fund raising and cooperative ventures.
3. Partnerships would be developed regionally to assure opportunity for access and programs for peoples with disabilities.
4. The Refuge would continue partnerships similar to Alternative 1.

Alternative 3

Management alternative maximizes wildlife benefits by focusing on habitat protection and enhancement, and describes a reduced public use approach. This Alternative is similar to Alternative 2 with respect to management of habitats and wildlife but de-emphasizes public use enhancements.

The public use experience would be primitive with uncrowded conditions and center on the compatible wildlife-dependent priority public uses. No additional improvements to public use and supporting facilities would occur. The miles of roads open for public travel would be reduced to protect habitat and reduce disturbance to wildlife. Commercial use of the River would be discontinued.

Alternative 3 would be the same as Alternative 2 with the following exceptions.

Alternative 3 A. Wildlife

Alternative 3 A1. Goal: Threatened and Endangered Species

To restore, enhance, or protect threatened and endangered flora and fauna that currently occur or have historically occurred in the area of Seedskadee NWR.

1. Similar to Alternative 2.

Alternative 3 A2. Goal: Wildlife

Preserve, restore, and enhance the ecological diversity and abundance of migratory and resident wildlife with emphasis on native species.

1. Similar to Alternative 2.
2. Hunting for sage grouse, snipe, mourning dove, and rails would be discontinued to reduce hunting pressure, simplify hunting seasons, and reduce general disturbance to wildlife on the Refuge.
3. The waterfowl hunting season would end December 1 to reduce disturbance to wintering wildlife, specifically providing an area where waterbirds can rest and feed. Ice formation in backwaters limits the use of wetland impoundments after early November.

Alternative 3 B. Habitat

Alternative 3 B1. Goal: Riparian

Protect and restore riparian habitats along the Green River to provide for the annual life needs of migratory birds and native wildlife utilizing the Green River Basin.

1. Similar to Alternative 2.

Alternative 3 B2. Goal: Wetland

Wetlands will be managed to meet the breeding and migratory requirements of waterfowl, shorebirds, wading birds, and other wetland dependent species.

1. Similar to Alternative 2.

Alternative 3 B3. Goal: Uplands

Preserve, restore, and enhance the ecological diversity of indigenous flora associated with the Great Basin upland desert shrub and grassland habitats to support native wildlife found in the Green River Basin.

1. Similar to Alternative 2.

Alternative 3 B4. Goal: Riverine

The Refuge staff, in collaboration with Wyoming Game and Fish Department and Reclamation, will manage water quality and quantity in the Green River to maintain and/or restore the riparian and cottonwood forests and provide habitat for waterfowl, trumpeter swans, fish, and other native species dependent on river and forested habitat.

1. Similar to Alternative 2.

Alternative 3 B5. Goal: Invasive Species

Restore and maintain indigenous flora diversity by controlling the invasion of exotic plant species on the Refuge.

1. Similar to Alternative 2.

Alternative 3 C. Public Use, Recreation, and Resource Protection

Alternative 3 C1. Goal: Wildlife-Dependent Recreation

Nurture an understanding of and appreciation for wildlife and other natural resources of the Green River Basin by providing opportunities for compatible wildlife-dependent recreation while maintaining the primitive, uncrowded nature of the area.

1. The auto-tour would remain as in Alternative 1. No additional interpretation facilities would be created. Parking areas would be delineated along designated roads. Existing pullouts would be enhanced along improved roads (auto tour routes) to provide wildlife and scenic viewing opportunities.
2. Fifty-nine miles of roads would be open for public travel (Map 11). This Alternative has the fewest miles of roads open to public use in order to minimize disturbance to wildlife and habitat. As appropriate for wildlife protection or road conditions, other roads may be seasonally or temporarily closed. All areas remain open for foot travel.
3. Hunting would continue as a priority public use but hunting for mourning doves, rails, snipes, and sage grouse would be discontinued. Hunting closures would be implemented similar to Alternative 2. The waterfowl hunting season would be shortened and end December 1 to reduce disturbance to wintering wildlife.
4. The River would be closed for commercial use.
5. The Refuge would cooperate with the WYG&F to create a no-motorized water craft zone through the Refuge. Motors would be allowed for emergency purposes only.
6. Visitor use levels on the River would be determined by a future Reclamation and FWS study. Use levels and resource impacts would be monitored. If visitor use levels increase to a level where resource impacts occur, areas may be closed temporarily or permanently to protect wildlife and habitat, and to maintain the primitive character.
7. No new trails would be created.
8. Similar to Alternative 1, a comprehensive wildlife observation guide would be available.
9. Special youth-oriented activities would be maintained similar to Alternative 1. No new activities would be pursued.
10. Hunting and fishing opportunities for people with disabilities would be provided informally and on a requested basis.
11. Decisions on hunting and fishing would be controlled similar to Alternative 1. A new fishing and hunting leaflet would be developed.
12. There would be no additional improvements to boat ramps and roads.
13. Recreational use would be monitored. Use limits and seasonal closure may be instituted if visitor use levels increase to a level which disturbs wildlife, causes resource impacts, or exceeds visitor tolerances.

Alternative 3 C2. Goal: Environmental Education and Interpretation

Educate and inform the public about the Refuge, the U.S. Fish & Wildlife Service, The National Wildlife Refuge System, and the Upper Colorado Ecosystem by providing quality environmental education and interpretation opportunities.

1. Wildlife viewing would be self-guided. No new environmental education facilities would be developed at the Refuge.
2. No new interpretive signing would be created. Existing interpretive displays would be updated.
3. Additional trails would not be created.
4. The development of a River interpretive brochure and the creation of teacher curriculum packages would not be pursued.

Alternative 3 C3. Goal: Resource Protection

Protect Refuge resources from adverse natural and/or man-made impacts.

1. Visitors would be provided information on universal access and the best user opportunities for people with disabilities. Universal access would be provided on a case-by-case basis.
2. No new public use facilities would be developed that require management and maintenance by the Refuge.
3. The remaining five acres of privately held land within the Refuge boundary would be purchased if there were a willing seller similar to Alternative 1. Other lands would be considered for acquisition on a willing seller basis if information indicated that additional acres were necessary for management of selected species (for example, threatened and endangered species) or for mitigation purposes. Such areas may include upstream riverine riparian areas, especially between Fontenelle Reservoir and Big Piney or lands surrounding the Big Sandy River. Any additional land acquisition or disposal would go through a public involvement process and be on a willing seller basis only.
4. No surface occupancy would be allowed within the Refuge boundary for development of privately-owned minerals.
5. Rights-of-way through the Refuge would be denied if alternative routes were available.
6. Off-site water for livestock watering would be developed and grazing or trailing of livestock would be eliminated on Refuge lands.

Alternative 3 C4. Goal: Cultural Resource

Protect and interpret significant historic and prehistoric cultural sites and objects associated with Refuge lands.

1. Similar to Alternative 1; however, little other formal protection or stabilization occurs.

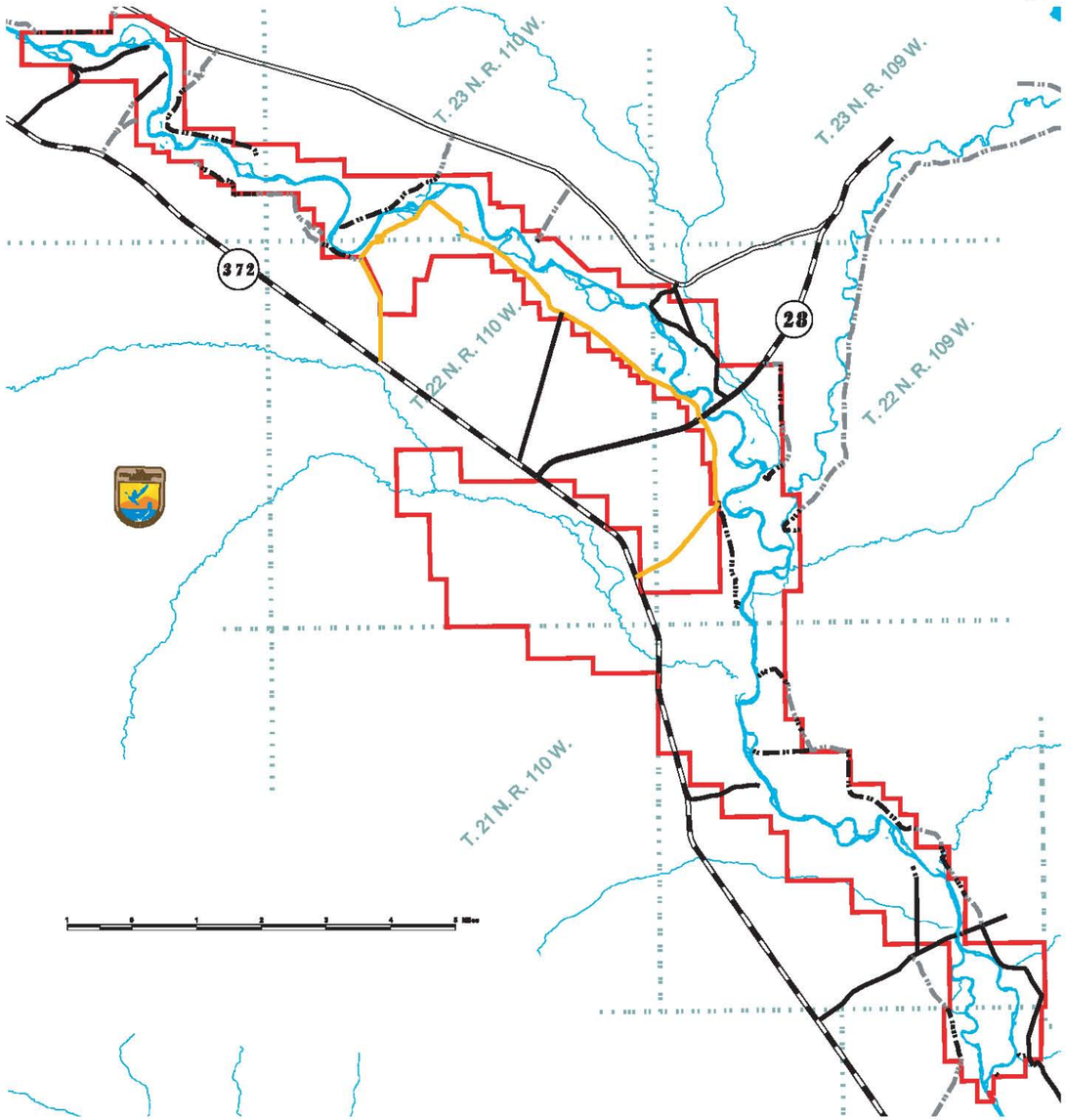
Alternative 3 C5. Goal: Partnership

Foster partnerships to promote wildlife conservation and habitat management in the Green River Basin and to help Seedskadee NWR accomplish its vision and goals.

1. Similar to Alternative 2.

Seedskadee National Wildlife Refuge

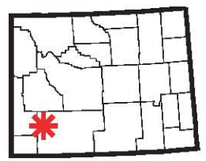
Sweetwater County, Wyoming



Legend

Refuge Roads
- AutoTour
- Improved
- No Maintenance
- No Maintenance (Off Refuge)

Refuge Location



State of Wyoming

Draft

Map #11 Refuge Roads - Alternative 3

Table 1. Seedskadee NWR Alternative Comparison Summary

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Threatened and Endangered Wildlife and Plant What measures are taken to protect threatened, endangered, and candidate species and species of management concern?	Management for T/E species consists primarily of habitat protection, protection of individuals from disturbance, providing adequate food resources, and some population monitoring.	Management of T/E species would continue with habitat protection, protection of individuals from disturbance, providing adequate food resources; expand monitoring to include populations and habitat; and allow active habitat management where necessary. Regular monitoring of populations of all sensitive species occurs. Surveys are conducted.	Same as Alternative 2.
	Special regulations/closures are instituted for protection of wildlife species and their habitat on the Refuge.	Same as Alternative 1.	Same as Alternative 1.
Wildlife What measures are taken to protect and manage native wildlife?	Hawley wetland managed for breeding trumpeter swans. Winter river flows maintained to keep areas ice free for wintering swans. Refuge cooperates with WYG&F in reestablishment of the Rocky Mtn. Trumpeter Swan population.	Refuge works to expand trumpeter swan nesting areas. Efforts to reduce disturbance to wintering waterfowl via seasonal road closures.	Same as Alternative 2.
	Moose and deer managed in cooperation with WYG&F.	Similar to Alternative 1; establish vegetative monitoring transects to evaluate management actions.	Same as Alternative 2.
	Sage grouse management involves protection of habitat.	Initiate population and habitat monitoring for sage grouse.	Similar to Alternative 2; however, hunting for sage grouse, snipe, mourning dove and rails are discontinued.
	Management of habitat for migratory birds and other indigenous wildlife species focuses on habitat protection.	Similar to Alternative 1; focus on additional enhancement of all habitat types and vegetative monitoring	Same as Alternative 2.
	When necessary, special regulations and closures are instituted for protection of wildlife species and their habitat.	Same as Alternative 1.	Same as Alternative 1.

Table 1. Seedskadee NWR Alternative Comparison Summary

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Riparian How will riparian habitat losses be mitigated to support migratory birds and native wildlife species?	A riparian restoration pilot project has been conducted. Restoration includes an emphasis on woody species planting.	Emphasis on restoring the dynamic functioning of the Green River and adjacent floodplain forests. Long-term riparian restoration plan developed.	Same as Alternative 2.
		Refuge will explore regeneration of cottonwoods and willows on new sites (McCullen, Tallman, Otterson, Johnson, and Big Island management units) created by increased water availability through manipulated River flows and/or irrigation. Pole planting at suitable sites.	Same as Alternative 2.
	Planting of understory shrubs in up to 9 sites. Repellants and plant barriers used to deter browsing. No monitoring wells installed.	Planting of understory shrubs in up to 5 areas. May be fenced to deter browsing. Wells installed to monitor groundwater depth and changes in depth in the riparian zone.	Same as Alternative 2.
	The flow regime for the Green River through the Refuge is managed by USBR for its project purposes and consistent with downstream water rights and commitments.	A prescriptive flow regime for the Green River through the Refuge would be established with USBR to increase the vigor of existing cottonwood/ willow communities and riparian regeneration.	Same as Alternative 2.
B1. Issue: How will riparian habitats be managed to support migratory birds?	See flow regime under A2.	See flow regime under A2.	Same as Alternative 2.
	There is little control of native wildlife that browse. A special hunt for mule deer occurs outside the regular season to reduce their numbers.	Wildlife that heavily browse riparian woody plants aggressively managed during the restoration phase. Exclosures may be constructed. Fire not used in floodplain forest while in poor vigor and not reproducing.	Same as Alternative 2.
	Livestock grazing not allowed or used in riparian areas.	Same as Alternative 1.	Same as Alternative 1.

Table 1. Seedskadee NWR Alternative Comparison Summary

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
	Monitoring - There is no regular monitoring program specific to riparian forested communities.	Monitoring - A long-term habitat monitoring plan for riparian forested communities established. MAPS monitoring may occur periodically.	Same as Alternative 2.
Wetlands How will wetland losses be mitigated to support migratory birds and native wildlife species?	Three oxbow wetlands have been restored in the McCullen Bluff, Hawley, and Hamp units. Wetlands' creation and enhancements in the Hamp, Hawley, Lower Hawley, and Dunkle Units. Further mitigation focus on restoring historical, enhancing existing, and creating new wetlands. One wetland complexes will be developed in the Pal management units.	Similar to Alternative 1, except wetland development would restore and/or enhance existing or former wetlands. Pal Management Unit enhanced.	Same as Alternative 2.
	One additional sill would divert water from the Green River into historic side channels and restore associated wetland habitat. Natural topography used to minimize soil disturbance and alterations to natural features.	Similar to Alternative 1, except one additional oxbow may be restored if feasible.	Same as Alternative 2.
How will wetlands be managed to support migratory birds and native wildlife species?	Existing wetlands units (Hamp, Hawley, Dunkle) are managed to provide migratory and breeding habitat for waterfowl, shorebirds, and wading birds.	Hamp, Hawley, and Pal Units managed for breeding and migratory habitat. The remaining wetland units managed as migratory habitat for waterfowl, shorebirds, and wading birds. For seasonal/temporary natural wetland areas, management/ maintenance through natural river flows and flooding.	Same as Alternative 2.
	A Water Management Plan applied and modified to provide shallow wetland habitats for spring and fall migration, and breeding and brood-rearing areas.	Similar to Alternative 1; however, the Water Management Plan applied in the Hamp, Hawley, and Pal units. Water management varied and mimic natural cycles. Prescribed fire may be used to control emergent vegetation.	Same as Alternative 2.

Table 1. Seedskadee NWR Alternative Comparison Summary

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
	Monitoring: Little for wildlife use; infrequent for waterfowl production; no vegetative monitoring.	Monitoring: Yes for wildlife species using wetland units, restored oxbows and natural wetlands. Infrequent for waterfowl production	Same as Alternative 2.
How are predators and nuisance species controlled?	Predator Management Plan followed. Management trapping occurs in the Hawley and Dunkle unit for nest predators during waterfowl nesting season. Beaver removed when significant damage occurs. Animals live-trapped where possible. Trapping permits issued for management purposes.	Similar to Alternative 1. Management trapping by Refuge staff for nest predators may occur in the Hamp, Hawley, Dunkle, and Pal management units during breeding season.	Same as Alternative 2.
Upland How would upland shrub and grassland habitat be managed to support native wildlife species and migrating birds?	Upland areas are fenced, but not intensively managed. Grazing and prescribed fire have not been used as a management tool.	Habitat management/ protection for wildlife species of management concern. Fences maintained. Stands of tall sagebrush in woody draws protected. May conduct small burns with monitoring in greasewood stands to convert to an early successional state and increase species diversity of grasses and forbs. No domestic livestock grazing allowed.	Same as Alternative 2.
	No monitoring.	Vegetation monitoring prior to any treatment. Long-term habitat monitoring program instituted. Monitoring of wildlife species of management concern.	Same as Alternative 2.
Riverine How are fisheries managed on the Refuge?	WYG&F manages the cold-water (sport) fishery. Cooperation occurs with fishery habitat improvements.	Similar to Alternative 1; except closer coordination with WYG&F.	Same as Alternative 2.
Weeds To what extent are weeds (invasive, nonnative plants) controlled?	Weed control efforts targeted to small, spreading infestations and to preventing existing large populations from seeding. Integrated Pest Management Plan used.	Similar to Alternative 1; however, more aggressive. Decrease dependence on chemical control. Fields of tall whitetop in Headquarters area converted to mix of grasses and forbs.	Same as Alternative 2.

Table 1. Seedskadee NWR Alternative Comparison Summary

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
		Partner with USBR and BLM to control upstream salt cedar infestations	Same as Alternative 2.
Public Use and Recreation Wildlife Viewing and Photography To what extent are opportunities provided for wildlife viewing and photography?	Comprehensive wildlife observation guide is available. No special accommodation made for photography. Nine mile long seasonal wildlife auto-tour route exists. One overlook at wetland unit near Refuge headquarters.	Similar to Alternative 1; however, existing 15 miles of improved road system maintained on a regular basis. Pullouts enhanced along auto-tour route.	Same as Alternative 2.
		Selected species managed for enhanced wildlife viewing opportunities.	Same as Alternative 2.
		One nature trail developed near Headquarters.	No new trails developed.
Hunting What types of hunting opportunities are provided on the Refuge?	Refuge partners with WYG&F to manage hunting. Hunting plan updated annually. Hunting is allowed in all but two areas. Temporary duck blinds made from artificial materials or dead down materials allowed. Special doe deer hunt to reduce population. Hunting opportunities for persons with disabilities provided on a requested basis.	Similar to Alternative 1. Most of the Refuge open for game bird, waterfowl, small, and big game hunting subject to closures or regulation for public safety or resource protection. A new closed area established via a separate public process. Efforts would be made to provide hunting opportunities for people with disabilities. Blinds permitted similar to Alternative 1.	Similar to Alternative 2; however, seasons for sage grouse, rails, snipe, and mourning doves would be discontinued. Waterfowl season on Refuge lands shortened to end December 1. Hunting opportunities for persons with disabilities provided on a requested basis.
Recreational Trapping What types of recreational trapping are allowed on the Refuge?	Recreational trapping is allowed by special use permit for management purposes only. Trappers must be experienced and licensed with the State of Wyoming.	Same as Alternative 1.	Same as Alternative 1.
Sport Fishing What types of sport fishing opportunities are provided on the Refuge?	The Green River is managed by WYG&F as a trophy trout fishery; State regulations apply. The Refuge provides informal launch sites and parking. Recreational fishing is unlimited. "Take A Kid Fishing Day" is one of the principal outreach activities.	Similar to Alternative 1, Four boat ramps developed with parking and improved ramps. Boat launching restricted to developed launches. Road-side pullouts provided for bank anglers in high use areas. Accessible rest rooms provided at Dodge Bottoms.	Similar to Alternative 1, except no additional enhancements to existing boat launching facilities.

Table 1. Seedskadee NWR Alternative Comparison Summary

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Commercial Guide Fishing/ Floating Is commercial guide fishing/floating allowed and how is it managed?	Commercially guided scenic floats and fishing trips allowed from the north boundary to the take-out downstream of the Big Sandy confluence (6 Mile Hill boat ramp).	Similar to Alternative 1.	No commercial guided fishing or guided scenic tours would be authorized.
	Fee permits issued on an annual basis. Currently 6 permits. Through attrition, reduce number to 4 or less. The season is from April 1 to October 30. The number of boats per day/outfitter and the number of boats per day/section of river limited. Daily use is first-come, first-served and coordinated by permittees. Permittees can provide both fishing and scenic tours.	Similar to Alterative 1.	No permits issued.
	Use data required from permitted guides. Formal monitoring of recreational use not conducted by Refuge.	Recreational use monitored and commercial permitted use enforced on the river by Refuge staff. If visitor use levels increase to a level at which wildlife disturbance occurs, resource impacts occur, or which exceed visitor tolerances, use limits and seasonal closures instituted.	Monitoring of recreational use similar to Alternative 2.
Camping Is camping allowed, and if so, where and how are sites developed and the use managed?	Refuge closed after dark. No camping or overnight parking is provided on the Refuge. Visitors directed to facilities outside the Refuge.	Same as Alternative 1.	Same as Alternative 1.
Boating Is boating allowed on the River through the Refuge?	Unrestricted boating allowed on the river through the Refuge. Most use is by non-motorized water craft.	Refuge cooperates with WYG&F to create a no-wake zone restrictions through the Refuge. Interagency River Management Plan prepared and implemented to coordinate river use on the Green River.	Refuge cooperates with WYG&F to create a no-motor water craft zone through the Refuge.

Table 1. Seedskadee NWR Alternative Comparison Summary

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Visitor Use Level What is the appropriate visitor use level of the Refuge?	Visitor use levels not limited except for commercial use on the River.	Similar to Alternative 1; however, current and proposed future use levels on the river determined by future recreational use studies. Use levels and resource impacts monitored. If visitor use levels increase to a level where resource impacts occur, areas may be closed temporarily or permanently to protect wildlife and habitat.	Same as Alternative 2.
Access Management How is access/travel managed on the Refuge?	All vehicle travel restricted to existing designated roads. Seventy-seven miles of roads are open to public travel. Some spur two-track closures have occurred. Contain traffic to designated roads via signing. Closed roads allowed to naturally revegetate. Parking occurs haphazardly. All areas are open to foot travel.	Two-tracks and trails identified which currently enter sensitive areas and compromise important wildlife habitat, and two-tracks and other roads determined unnecessary for Refuge management, would be closed and reclaimed. Sixty-five miles of designated roads will be open for public travel. Of the 65 miles of open roads, 5.4 miles will be seasonally closed every year from November 15 through March 15 . As appropriate for wildlife protection or road conditions, other roads may be seasonally or temporarily closed. All refuge lands will be open to foot travel.	Fifty-nine miles of roads would be open for public travel. This Alternative has the fewest miles of roads open to public use in order to minimize disturbance to wildlife and habitat. As appropriate for wildlife protection or road conditions, other roads may be seasonally or temporarily closed. All areas remain open for foot travel.

Table 1. Seedskadee NWR Alternative Comparison Summary

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
River Access How is River access managed?	Informal vehicle parking and boat launching areas have been "established" by users over the years. Maintain four improved boat ramps with parking areas. Reduce development of two-track roads.	Four designated boat ramps with associated parking developed at Dodge Bottom, Hay Farm, Highway 28, 6 Mile Hill. Further improve boat ramps with cable create. Improve directional signing and provide road pullouts at key locations. Improve control of access by signing designated roads. Livestock access lanes will be enhanced by designating parking areas and increased signing to reduce conflicts between livestock and recreationists.	Same as Alternative 1. Same as Alternative 2. Livestock lanes eliminated and off site water established.
Universal Access To what extent is universal access to public use facilities and activities provided?	The Headquarters public rest room is universally accessible. Lombard Crossing historical display is accessible. Accessibility will be a high priority in developing new facilities and public use opportunities. Otherwise access is informal and on a requested basis.	Similar to Alternative 1, in addition new facilities universally accessible. A range of accessible wildlife-dependent recreational activities provided. Efforts made to provide hunting and fishing opportunities for people with disabilities.	Similar to Alternative 1. Visitors would be provided information on universal access and the best user opportunities for people with disabilities. Limited facility development planned. Universal access would be provided on a case-by-case basis.
Environmental Interpretation and Education Environmental Interpretation To what extent are opportunities pursued to interpret natural resources, especially wildlife and their habitat for the visiting public?	Interpretive exhibits at headquarters, a portable exhibit for interpretive outreach, an information kiosk, two interpretive signs at the Overlook. No interpretive "trails" exist on the Refuge.	Similar to Alternative 1. Add pullouts and interpretive sites along the auto-tour route. Interpretive themes at Headquarters visitor area carried out through the Refuge. One nature interpretive walking trail (near Headquarters), one river floater's interpretive "trail," and one cultural trail at Lombard Ferry. Interpretive information made accessible to all. Existing interpretive signs updated.	Same as Alternative 1.

Table 1. Seedskadee NWR Alternative Comparison Summary

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Environmental Education What type of environmental education program is provided to the public?	Refuge provides tours to schools, civic groups, and other organizations upon request. Environmental education is integrated with recreational opportunities.	Similar to Alternative 1, with the following additions: EE emphasis on K-12. Refuge conducts a minimum of two on-site teacher training workshops on the Green River and Refuge resources. Opportunities to partner pursued. EE curriculum packages for interpretive trails developed. A new education/visitor accessible center located near headquarters.	Similar to Alternative 1. Wildlife viewing would be self-guided. No new environmental education facilities would be developed at the Refuge. No additional educational programs developed.
Resource Protection Public Information How is information on the Refuge, its resources, and regulations provided to the public?	A general Refuge brochure, historical brochure, hunting and fishing regulations, and access information are available upon request.	Similar to Alternative 1; however, all brochures updated, and a more detailed travel map produced. Refuge and River use guidelines and regulations posted.	Same as Alternative 2.
	Known river hazards are posted.	Visitors provided information on user safety and emergency help notification.	Same as Alternative 1.
	Few directional signs are provided.	Directional signs added or improved.	Same as Alternative 2.
	Outreach and public relations programs provided upon request if staff are available.	Refuge staff conducts an active outreach/public relations program to establish relationships and provide information to state and local governmental officials, neighboring communities, appropriate organizations and interest groups, and state and local media outlets.	Same as Alternative 1.
	Facility development is not clustered.	Facility development clustered in the northwest quadrant of the Refuge with the remainder of the Refuge in a primitive and semi-primitive condition. Install accessible toilet at Dodge Bottoms.	Same as Alternative 2.

Table 1. Seedskadee NWR Alternative Comparison Summary

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Cultural Resources How are cultural resources protected?	Resource protection largely reactive. The Refuge complies with section 106 of the National Historic Preservation Act and consultation with the State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (ACHP) occurs.	Similar to Alternative 1; however, more proactive. Refuge complies with Sections 106 and 110 of the NHPA. A Class III pedestrian cultural resource survey would be conducted for Refuge areas not previously surveyed. Known cultural resource sites and potential sensitive areas avoided when practical. Adverse effects to sites would be mitigated. A cultural resource overlay (i.e. map) is produced for its spatial resource information data base (GIS).	Same as Alternative 1.
	Little direct protection/stabilization occurs for historic sites.	Significant historic sites would be thoroughly recorded.	Same as Alternative 1.
To what extent are opportunities pursued to interpret cultural resources for the visiting public?	Interpretation of the cultural history of the area limited to the historic period. An interpretive site at Lombard Ferry site with a Lombard Ferry replica. There is interest by the FWS to interpret Native American history of the surrounding area. An historical leaflet is available which interprets local and national history of westward expansion and settlement of the area.	Similar to Alterative 1; however, the interpretation based on a unifying theme. Refuge interprets nationally significant historic sites including ferries, the Oregon/Mormon Pioneer and Pony Express Trails and their crossings, Jim Bridger's Trading Post and locally significant homesteads site. Incorporate interpretation the Lombard Ferry replica into the existing Lombard Crossing interpretive site. Historical leaflet updated.	Similar to Alternative 1; however, no new facilities developed that require management and maintenance by the Refuge.
Partnership To what extent are partnership opportunities pursued with volunteers, local service groups, organizations, individuals, schools, and other governmental agencies?	Cooperation with USBR, WYG&F, and BLM continues. Refuge conducts ongoing volunteer program.	Similar to Alternative 1, plus seek additional volunteer assistance. Encourage and support the development of a local "Friends" organization or other cooperative association.	Same as Alternative 1.

Table 1. Seedskadee NWR Alternative Comparison Summary

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
	The Refuge looks for partnering opportunities to provide interpretive facilities at the Lombard Crossing site.	Same as Alternative 1.	Same as Alternative 1.
	The Refuge participates in the Partners for Wildlife Program and Green River Focus Area of the Intermountain West Joint Venture.	Same as Alternative 1.	Same as Alternative 1.
	The Refuge will participate in other neighboring Federal, State and local planning processes.	Same as Alternative 1. Encourage the development of a study with USFWS, BLM, and USBR to establish eligibility and suitability of designating the Green River as wild, scenic, and recreational river. Partnerships developed regionally to assure opportunity for access and programs for peoples with disabilities.	Same as Alternative 1.
Administrative Management Concerns Land Acquisition Is further land acquisition or land disposal planned?	Remaining five acres of privately held land within the Refuge boundary purchased on a willing seller basis. No additional new lands acquired.	Similar to Alternative 1.	Same as Alternative 1.
		Other lands considered for acquisition if necessary for management of selected species or for mitigation purposes.	Same as Alternative 2.
		Additional land acquisition or disposal would go through a public involvement process.	Same as Alternative 2.
	No lands would be disposed.	No lands disposed of unless in a trade with another Federal agency to further Refuge purposes.	Same as Alternative 2.

Table 1. Seedskadee NWR Alternative Comparison Summary

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Minerals How will privately-owned minerals be developed?	Surface use subject to Refuge approval and stipulations.	Mineral exploration and development allowed only for privately-owned minerals and under surface use stipulations designed to maximize protection of wildlife, stabilization of soils, and restoration of disturbed vegetation. No surface occupancy allowed for access to privately-owned minerals if they could be otherwise reasonably accessed. Acquisition of minerals may be considered at select sites if resource/public use conflicts occur and cannot be mitigated under use and occupancy stipulations.	No surface occupancy allowed within the Refuge boundary for development of privately-owned minerals.
Rights-of-Way What is the Refuge's policy toward requests for grants of ROW across the Refuge?	Several ROWs and easements currently exist within the Refuge. ROWs are reviewed and approved on a case-by-case basis.	ROWs reviewed and approved on a case-by-case basis. ROWs through Refuge would be denied if feasible alternative routes are available. If no alternative route available, restrict ROW to existing utility corridors with Refuge stipulations.	ROWs through Refuge would be denied if alternative routes are available.
Livestock Access How is access to water for livestock provided?	Access to water livestock provided to Rock Springs Grazing Association permit holders according to deeded reservation. Access to water may be via watering lane, off-site water development, or by a Refuge Special Use Permit. Access provided as a courtesy to other BLM permit holders through fenced livestock watering lanes (water gaps). Existing lanes maintained solely at Refuge expense.	Subject to deeded reservation. Similar to Alternative 1.	Off-site water would be developed where possible. Trailing of livestock through the Refuge to access water would be eliminated.

Table 1. Seedskadee NWR Alternative Comparison Summary

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Grazing Is grazing allowed on the Refuge? What is the Refuge doing to prevent livestock trespass?	A single reservation exists on the Refuge for a livestock holding pen and for a calving area at the south end of the Refuge. These will be managed under a Special Use Permit. No permitted grazing is currently ongoing on the Refuge. Livestock trespass occurs; enforcement of trespass difficult. Boundary fencing used to exclude livestock.	Similar to Alternative 1. Upon completion of the Refuge boundary fence and watering lanes, livestock trespass laws would be strictly enforced. The Refuge would continue to try new designs for watering lanes to prevent trespass. The boundary fence will be regularly checked and repaired as necessary.	Same as Alternative 1. Same as Alternative 2; however, efforts would be made to remove water lanes and develop off-site water sites.
Fire Management How is fire managed on the Refuge?	Fire Management Plan and an Interagency Dispatch Plan followed. Wildfires suppressed. A cooperative agreement for fire suppression exists with local, State, and other Federal agencies in the area.	Same as Alternative 1.	Same as Alternative 1.

Chapter 3. Affected Environment: Resource Inventory

Chapter 3 of the EA incorporates by reference Chapter 3 - Refuge and Resource Description of the CCP.

Chapter 4. Environmental Consequences

The following effects discussion is organized by Seedskadee NWR goals and the issues identified during the public process, by the general public, interested agencies, and organizations.

Alternative 1 Present Management Continues
Alternative 1 Wildlife
Alternative 1 Threatened and Endangered Plants and Wildlife

Generally, beneficial effects may occur to threatened, endangered, candidate, and wildlife species of management concern from habitat protection, limiting disturbance to individuals, provision of adequate food resources, and minimal population monitoring. Continued or increased disturbance by winter visitors to wintering waterfowl, trumpeter swans, and other sensitive species continues to be an issue under this Alternative.

Sensitive species that are dependent upon riparian shrub communities along the River and riparian forest may experience continued degradation of their habitats. Under Alternative 1, there is no assurance that the riparian forest along the Green River would be preserved. Current impacts from invasive species, uncontrolled visitor access, and the lack of public use monitoring may continue to impact sensitive vegetation and riparian areas, thus reducing the quality of potential habitat for sensitive wildlife and plant species.

Alternative 1 Wildlife and Habitat

Management of the existing Hawley wetland unit for trumpeter swans would continue to benefit this species in addition to numerous other wetland dependent species. Development of an additional wetland unit would increase benefits for a variety of wetland species. Management of winter flows to maintain ice free waters will continue to benefit a variety of wintering bird species.

Management of moose and deer would continue but lack of vegetative monitoring would make evaluation of management strategies difficult. Enhancement of portions of the riparian corridor would benefit a variety of avian and mammal species; however, riparian restoration efforts may be jeopardized without proper management of herbivores.

Protection without active management of upland habitats may eventually result in degraded habitat conditions for the sage grouse and other upland species. Lack of monitoring in upland habitats for grouse and other species makes management programs difficult to develop and eventually evaluate.

Current impacts from invasive species, uncontrolled visitor access, and the lack of public use monitoring may continue to impact all habitat types, thus reducing the quality of potential habitat for all wildlife and plant species.

Alternative 1 Riparian

The operation of Fontenelle Dam and Reservoir moderates flows of the Green River below the dam from what would be experienced if the dam were not in place. The high peaks of major high flow events are substantially reduced below the dam. Channelizing has likely incised the River channel. Coupled with lower peak flows and timing changes in restricted flows, the hydrologic system through the Refuge has changed depriving woody plants and seeds of adequate water when needed to sustain the historic plant communities and also has resulted in many fewer disturbed sites where regeneration can take place. These circumstances negatively effect the riparian habitat within the Refuge. Higher than historic winter flows have also increased ice scouring which, over the winter, essentially cuts off cottonwood seedlings that have emerged along the River banks.

The riparian forest would continue to age, be in poor health when compared with the upstream forest above Fontenelle Reservoir, remain simpler in structure, and have insufficient regeneration to establish new age classes. Under these continued conditions, the existing riparian forested habitat, which is crucial for migrating and breeding songbirds, may severely deteriorate. Without management intervention over the long-term, the forest is likely to die out.

Riparian forest provides habitat for the greatest number of migratory bird species on the Refuge. Countless numbers and species of birds rely on the riparian forest of the Green River to migrate to and from their breeding areas to the north. Birds use this habitat for foraging, roosting, and cover during migration. Forest breeding birds that winter in Central and South America are not capable of migrating solely through the arid semidesert shrubland that predominates much of Utah, Colorado, and Wyoming. Instead, they rely on the north-south riparian forest corridor of the Colorado and Green Rivers.

The planting of understory woody shrubs in up to nine sites would increase the shrub cover for wildlife and migratory birds.

Riparian habitat may continue to be negatively effected by the insufficient control of native wildlife such as deer, moose, and beaver that browse on woody plants. Some effort is made to reduce the number of mule deer that browse by holding a special hunt. While the riparian forest is managed for migratory birds, without ongoing monitoring of ungulate and deer populations, the degree of success would be unmeasured.

Alternative 1 Wetland

Providing one additional managed wetland complex in the Upper Hawley and Pal Management Units would benefit migratory and breeding habitat for waterfowl, shorebirds, and wading birds.

Breeding habitat consists of areas where courtship and breeding may occur; suitable nest sites are available; and adequate resources are available to sustain birds through fledgling from the nest. Existing nesting islands are inadequately designed and are infested with perennial pepperweed. These problems are unresolved in Alternative 1.

The continuation of predator trapping in the Hawley and Dunkle units has a beneficial effect for ground-nesting birds. Apparent nesting success over the last five years has been over 65 percent. However, in the other units where trapping is not occurring, nest success would continue to be a management concern.

Water within the wetland units is managed for shallow wetland habitats for the spring and fall migration and breeding and brood-rearing areas to ensure the most successful result for migratory birds. Species that benefit by this Alternative include the trumpeter swan, Canada goose, numerous species of ducks, the marsh wren, red-winged blackbird, yellow-headed blackbird, tiger salamander, boreal chorus frog, northern leopard frog, mink, and muskrat. However, with limited wildlife and waterfowl production monitoring, the degree of success would be unmeasured.

Restoring historic oxbow river channels may provide additional spring migration, breeding, or fall migration habitats for birds. Restorations would also improve conditions for fisheries by providing spawning, nursery, or overwintering areas.

Alternative 1 Uplands

Sagebrush habitats are not monotypic but in fact consist of a mosaic of shrub types of which sagebrush is the most dominant. The largest block of upland habitat (sagebrush, salt shrub, greasewood, and grass) is the Dry Creek Unit which is fenced and free of grazing by domestic livestock. This practice has resulted in an upland system closer to approximation of natural conditions (prior to introduction of grazing in the last century) than anywhere else in the immediate region. Therefore, overtime, without intensive management, this system should be vital to and supporting of native wildlife species and migratory birds such as wintering sage grouse, burrowing owl, mountain plover, prairie dog, loggerhead shrike, pygmy rabbit, antelope, and mule deer.

All wildfires would be suppressed, and controlled prescribed fire would not be used as a management tool. Because fire is controlled and not used as a management tool, habitat would tend to become a similar age class diminishing habitat diversity and beneficial use by native species and migratory birds. Invasive greasewood and sagebrush would continue to become dominant over more important forage plants.

The 350 acres in the Hay Farm Management Unit would continue to be a mix of grasses and tall annual weedy forbs and may gradually convert to a greasewood/sage habitat type.

Alternative 1 Riverine

Existing winter flows provide some ice-free water each year which would continue to benefit the Rocky Mountain population of trumpeter swans, bald eagles, and wintering waterfowl. However, unrestricted public access would continue to negatively impact these species, compromising the open water benefits.

The lack of restrictions on motorized water-based activities could contribute to water quality problems affecting fingerling trout populations. Increased turbidity from boat launching, shoreline angling or motorized watercraft could affect littoral zones and decrease feeding efficiency. However, with visitor use levels as low as they are, the chance of these negative effects occurring are minimal.

Vehicular use of undesignated roads is prohibited under this Alternative, but without full-time enforcement staff monitoring the area, it is doubtful that warning signs would be consistently obeyed. The use of motorized vehicles near the Green River would degrade habitat by increasing river bank erosion, destroying vegetation, disturbing riverine wildlife (waterfowl), disturbing river recreationists, and degrading the viewshed.

Unrestricted visitor uses over time could cause degradation in river bank vegetation that provides cover for fish and wildlife.

Providing rock sills in the Green River provides structure, cover, and beneficial habitat for the fishery. These structures may also improve adjacent wetland/riparian areas by increasing the water table and subsequent water availability to riparian vegetation.

Alternative 1 Invasive Species

The invasion of several nonnative plants is a serious threat to Refuge habitats, especially wet meadows and adjoining riparian areas. Perennial pepperweed, salt cedar, Russian knapweed, and musk thistle are the most troublesome species. Of these, pepperweed is the most widespread and difficult to control. Currently, the only practical method for controlling pepperweed is the use of herbicides. Biological control through the release of beneficial insects is under development; however, its approval is not expected for another ten years. Mechanical control through mowing or grazing can reduce the spread of seed; however, it does little to stress the plant which stores most of its energy underground. Likewise, fire does very little to control the plant. Often it actually benefits the plant by reducing its competition from the surrounding grass and forbs. The other troublesome species are currently found only in isolated patches. They are aggressively controlled through a variety of methods including biological, mechanical, and chemical.

The invasion of this nonnative plant poses an additional problem by providing cover for predators, loss of beneficial wildlife forage and cover, and loss of plant diversity. Under Alternative 1, neither the problems of weed control or reclaiming weed-dominant habitats are well resolved.

Alternative 1 Public Use and Recreation

There is no change in the management of public use and recreation experience at Seedskadee in the short-term. There is potential for increased use as the Refuge becomes more popular. Effects of public use may be evident in increased damage to vegetation, fisheries, water quality, soils and visual quality due to the absence of direction of use, vehicles, boating, and other activities.

Visual quality would remain the same under Alternative 1 but may degrade over time as visitors are accommodated rather than managed. The visual condition of the area has been impacted by off-road uses which have changed or destroyed vegetation. The continued erosion of disturbed riverbanks due to uncontrolled river access may cause runoff and siltation in the river as well as continued damage to existing vegetation. The random creation and continued use of two-tracks fragment habitat, destroy vegetation, increase weed problems, disturb wildlife and visitors, and significantly degrade the viewshed.

The nine mile long wildlife auto-tour route would continue to be seasonal. Pullouts would not be improved along the auto-tour so there would continue to be no unique accommodations for the wildlife photographer. While no designated nature trails are on the Refuge, all areas are open to foot traffic. Upon request, the Refuge staff would continue to provide special activities for youth.

Hunting is a priority public use and would be allowed under all Alternatives. With the hunting population, a positive public relations effect occurs with hunters gaining an appreciation for the Refuge as a resource. Hunting serves as a management tool by assisting in reducing browsers.

The developed Dunkle and Hawley wetland areas are closed to waterfowl hunting resulting in decreased disturbance to trumpeter swans and other waterfowl species using this as fall migrational habitat. However, after managed wetland units freeze up, the only water open for wintering birds is the River. Alternative 1 does not address the need to provide a disturbance free area for wintering waterfowl to rest and feed.

Trapping is allowed by special use permit for management purposes. Predator trapping has a positive effect on nest success.

Under Alternative 1, without a comprehensive fishing and hunting leaflet, the public may continue to be confused about areas open for hunting and Refuge regulations.

The Green River through Seedskadee NWR is open for angling year-round. There is a positive public relations effect with anglers gaining an appreciation for the Refuge as a resource. Young people who fish the Refuge benefit from the “Take a Kid Fishing Day” education programs.

During peak seasons, increased use with boats passing through the Refuge is not monitored or controlled. Unimproved and undesignated parking, boating, and angling access would continue to have an impact on sensitive vegetation.

Although general public camping is prohibited under this Alternative, without enforcement, unauthorized camping occurs. Unregulated and undesignated camping may continue to disturb sensitive wildlife and vegetation. Without monitoring of public use on Refuge resources, it is difficult to quantify the impact of the use on sensitive species.

Educational interpretation would continue to be very minimal and the public would continue to rely on "self guided" tours of the Refuge.

Environmental education would continue to occur on a limited as-requested basis, consisting mainly of tours of the Refuge. No facilities or developed programs exist, and little outreach is dedicated to environmental education. Without an ongoing education program, an understanding and appreciation for wildlife and other natural resources of the Green River basin is not nurtured.

Alternative 1 Cultural Resources

The Refuge would comply with all Federal and State laws and regulations. Little direct protection or stabilization occurs for historic sites. Resource protection would largely be reactive. Any interpretation of Native American history would have a positive effect expanding the public knowledge of the history of the Green River Basin.

Alternative 1 Partnerships

Cooperation with USBR, WYG&F, and BLM would continue on an as-needed basis. Refuge management would conduct ongoing volunteer programs involving student interns, retired persons, and local scout groups. However, recruiting, training, and supervising volunteers would be managed by existing staff and compete against day-to-day responsibilities. The Refuge staff would continue to look for partnering opportunities as needs arise. Staff would participate in the Wyoming Partners for Wildlife Program for habitat improvement on private lands and Partners In Flight Program for improved monitoring and protection of migratory birds. The Refuge would also maintain the lead in the Green River Focus Area of the Intermountain West Joint Venture—a cooperative venture with other Federal agencies and with private landowners in the Green River Basin. The Refuge would continue to participate in other neighboring Federal, State, and local planning processes.

Under Alternative 1, no minority or low income populations would be disproportionately affected by implementation of this Alternative.

Alternative 1 Administrative Management Concerns

The purchase of the remaining five acres would result in Seedskadee NWR owning all lands within their boundary and preclude any land management conflicts with private landowners.

Under Alternative 1, mineral exploration and development would be allowed subject to Refuge approval and stipulations. This approach gives those holding privately-owned minerals reasonable access. It is difficult to determine the extent of potential change to occur (roads, drill pads, or pipeline) if reasonable access were to occur.

Rights-of-way are granted on a case-by-case basis. If a right-of-way were approved, changes would occur in habitat on the right-of-way itself. Potential erosion and soil loss may occur until reclamation is achieved on the right-of-way. Short-term impacts may occur to the fishery depending on means of crossing the Green River.

Domestic livestock trespass would continue to occur largely through water lanes.

Alternative 2 Proposed Action
Alternative 2 Wildlife and Habitat
Alternative 2 Threatened and Endangered Wildlife and Plants

Beneficial effects may likely occur to special status species by providing habitat management and protection, limiting disturbance to individuals, provision of adequate food resources, surveying habitat and habitat quality, and conducting regular monitoring.

Using temporary or permanent closures, or both, to prevent wildlife disturbance or protect sensitive habitats, would benefit a variety of special status species. Regeneration of cottonwoods would be achieved on new sites created by increased water availability providing needed habitat for a number of special status species.

Alternative 2 Wildlife

Increased monitoring of vegetation in all habitat types will improve management decisions for trumpeter swans, grouse, migratory birds, deer, moose, etc. Initiation of population monitoring for grouse will facilitate development of management strategies for upland shrub habitats. Increased knowledge of browsing impacts will improve management of herbivores like deer and moose and support riparian restoration efforts.

Using temporary or permanent closures, or both, to prevent wildlife disturbance or protect sensitive habitats, would benefit a variety of wildlife species, especially trumpeter swans. Reduction in designated open roads will reduce overall disturbance to wildlife and reduce fragmentation of habitats. Seasonal closure of some roads and eventual modification of closed areas will provide much needed resting areas for wintering waterfowl.

Alternative 2 Riparian

Alternative 2 would provide the greatest benefit of any of the Alternatives to the riparian forest, migratory birds, and native wildlife species. Alternative 2 would develop a riparian restoration plan to determine effective methods to establish new age classes of woody plant species and restore the health to the riparian system. Increased and timely water availability would ensure regeneration of cottonwoods and improve the health of existing trees and willows. However, any change in flow regime could also affect optimal power production at Fontenelle. Changes in the prescriptive flow regime could also effect the frequency of flooding at Green River, Wyoming.

Suppressing wildfire and trapping for beaver would protect mature cottonwood forested areas. Maintaining the large diameter trees, snags, and dead trees would provide enhanced breeding, foraging, and migratory habitat for numerous bird species.

By installing wells to monitor groundwater depth and changes in depth, Seedskadee could select the most suitable sites and flows for restoration efforts. Working with Reclamation to establish a flow regime, particularly in years of favorable seed production or drought, may result in an increase of the vigor of existing cottonwood/willow communities and increased riparian regeneration.

Wildlife would be aggressively managed during the restoration phase to reduce populations of species that heavily browse riparian woody plants (deer, moose, and beaver). Exclosures would be constructed in selected areas which would protect regeneration and allow for vegetative recovery. Regularly maintaining livestock trespass fences would result in less livestock trespass and better vegetative growth.

If strategies are successful, a healthier community providing long-term quality habitat may occur over time. Success for migratory birds would be measured through a monitoring program.

Alternative 2 Wetland

In Alternative 2, wetlands would be managed first as migration habitat and habitat for resident species and second as breeding habitat for migratory waterbirds. The Hamp, Hawley, and Pal units would be managed for breeding and migratory habitat. The remaining wetland units would be managed principally as migratory habitat for waterfowl, shorebirds and wading birds. Specifically, the trumpeter swan, Canada goose, numerous species of ducks, the marsh wren, red-winged blackbird, yellow-headed blackbird, tiger salamander, boreal chorus frog, northern leopard frog, mink, and muskrat would benefit from wetland management in Alternative 2.

Periodically drawing down tall emergent vegetation and open water habitat every 5 to 7 years may stimulate natural wet and dry cycles and maintain wetland productivity. Drawing down short emergent vegetation for fall migration concentrates aquatic invertebrates and makes them available to many species of shorebirds. Extensive monitoring of the vegetative recovery and monitoring the kinds and numbers of species using the areas would determine the success of the approach of Alternative 2. The effects of restoring the historic oxbow river channels would be similar to Alternative 1.

Alternative 2 Uplands

Providing a diverse mix of upland desert shrub and grassland habitats could have positive effects for sage grouse, loggerhead shrike, prairie dog, mountain plover, burrowing owl, and pygmy rabbit. Protecting existing stands of tall sagebrush in woody draws from unplanned disturbance may provide crucial thermal cover and foraging areas for winter sage grouse, pygmy rabbit, antelope, and mule deer.

Converting the 350-acre Hay Farm Management Unit to an upland mixed-grass habitat type would benefit grassland species such as western meadowlark, savannah sparrow, vesper sparrow, bobolink, and lark sparrow.

Using small controlled burns as prescribed in Alternative 2 should realize a conversion of small areas of decadent greasewood to an early successional state. This conversion would provide a variety of successional stages across certain upland portions of the Refuge. Using prescribed fire in emergent wetlands would maintain open water and could rejuvenate decadent stands of grasses and other vegetation. Restricting the use of fire in floodplain forest habitats would protect existing stands of cottonwoods that are in poor vigor and not reproducing.

Implementing minor upland treatments could result in more vigorous and diverse upland habitats and, therefore, enhance habitat for resident and migratory species. Invoking long-term monitoring will measure the effects of various treatments.

Alternative 2 Riverine

Similar to Alternative 1; however, negative effects to the riverine habitat should diminish. Providing open water (ice-free) habitat in the River channel, sufficient aquatic vegetation, and exploring temporary closures may benefit wintering trumpeter swans, waterfowl, and bald eagles.

Closer coordination between managing agencies may also lead to positive effects to the fishery providing better recreational fishing and a food source for migratory birds such as white pelicans, bald eagles, herons, egrets, and cormorants. An improved public education and awareness campaign about river management may help to build support and understanding for management actions. Monitoring winter use by wildlife and visitors, including human-wildlife interactions will be important to evaluate the effectiveness of management strategies. Evaluation of changes to fisheries and aquatic vegetation from changes in flows will also be key factors to measuring the success of various flow strategies.

Alternative 2 Invasive Species

Decreasing the Refuge's dependence on chemical control of weedy plants may have a positive impact on wildlife. However, chemical control is generally the only effective method available for many species and the decrease in control may increase the spread of certain weeds. Developing partnerships with Reclamation and BLM may have positive effects by decreasing the encroachment of salt cedar and pepperweed from adjacent lands.

Alternative 2 Public Use and Recreation

Alternative 2 Recreation

The direct effects to the public use and recreation experience would be changes in development and level of control which may or may not be acceptable to those that currently use the Refuge. There would be the potential for enhancement of habitats, water quality, fisheries, and visual quality caused by the River access improvements and the restriction on Refuge access.

The closure of non-designated two tracks, the overall reduction in roads open for public travel, and the control of public access to the River would improve the areas' natural appearance and the solitude experienced by visitors. Modifications to conduct or improve public use opportunities such as hardening roads and ramps, and development of trails, interpretive information, and other amenities would be minor intrusions to the landscape that would not substantially detract from the larger natural setting.

Maintaining the nine mile wildlife auto-tour route would ensure year-round access for visitors. Enhancing pullouts along the auto-tour would provide new wildlife viewing and photography opportunities. The construction of one nature trail in a riparian area would expose a larger spectrum of people (various ages and abilities) to major habitats within the Refuge. Expanding special activities for youth would provide a greater opportunity to nurture an understanding of and an appreciation for wildlife and other resources.

Under Alternative 2, a new winter closed area would be established via a separate public process. The future closure would address the current lack of sanctuary for wintering birds. The seasonal road closure proposed in this Alternative partially addresses the needs of wintering wildlife. With the hunting population, there is a positive public relations effect with hunters gaining an appreciation for the Refuge as a resource. Hunting also serves as a management tool by assisting in reducing browse. Young people who hunt the Refuge benefit from the safety and courtesy of education programs. Species may benefit with management regulations. Increased law enforcement patrols may increase compliance. People with disabilities would be provided opportunities to participate.

The effects from sport fishing opportunities are similar to Alternative 1; however, Alternative 2 may entice more people to visit. Providing designated roads which are well signed in the field and mapped on the travel brochure will reduce destruction to vegetation and sensitive habitats.

Restricting and eventually reducing the number and allocation of commercial use permits to specific outfitters may add stability to the fishing program. The limitations set on commercial use and reaches available for guided use in Alternative 2 may improve the quality of the recreation experience but increase demand for permits. Commercial scenic/wildlife viewing floats may become popular in the future. With limits on permits and river use segments, non-commercial floaters/anglers may feel their experienced is enhanced.

Without additional enforcement, unauthorized camping and off-road travel may continue to disturb sensitive wildlife and vegetation. Monitoring of public use on Refuge resources, would help reduce the potential impact of these uses on sensitive species.

The development of a comprehensive fishing and hunting leaflet would enhance the visitor experience and the increased law enforcement patrols should realize beneficial effect from more compliance. The monitoring of public use of Refuge resources would add greater protections.

The increased environmental interpretation efforts would have a positive effect informing visitors of the importance of plants and wildlife relative to the human history of the area. The river and riparian interpretive trail and interpretive panels at pullouts along the auto-tour would improve the quality of the educational experience on the Refuge.

The improved environmental education and public information programs would enhance a visitors appreciation and understanding of the Refuge, wildlife, and history.

Clustering facility development in the northwest quadrant of the Refuge directs public use and keeps the remaining portion of the Refuge in a semi-primitive state. This would have a positive effect on vegetation, wildlife, and visual quality resources.

Alternative 2 Cultural Resources

The effects would be similar to Alternative 1; however, the approach would largely be proactive. Significant cultural resources (historic and prehistoric) would be preserved and protected from inadvertent damage that could occur as a result of Refuge undertakings. A positive effect would be realized because significant cultural resources would be recorded and avoided. Maintaining the character of the historic viewshed of the Oregon and Mormon National Historic Trail would ensure the historic visual quality of the area.

Alternative 2 Partnerships

New opportunities for partnerships are developed that may result in promoting and sustaining the development and management of the Refuge. Providing room and board for volunteers while working at the Refuge would encourage more people with diverse backgrounds to volunteer at the Refuge and provide a higher quality volunteer experience and probably a more productive program. Management would assume a leadership role with government officials on issues relating to wildlife and habitat management. This may improve the understanding of the Service's mission, the mission and goals of the Refuge System, and the purpose and goals of Seedskadee NWR.

Under Alternative 2, no minority or low income populations would be disproportionately affected by implementation of this Alternative.

Alternative 2 Administrative Management Concerns

Alternative 2 would provide an opportunity for acquisition of additional land if warranted for management of selected species or for mitigation purposes. This approach ensures that the Refuge would be able to meet their purpose and address unknown future needs. However, if new lands were acquired, impacts would occur on budgets and management.

Under Alternative 2, mineral exploration and development would be similar to Alternative 1; however, no surface occupancy would be allowed for access to privately-owned minerals if they could be otherwise accessed.

Similar to Alternative 1; however, Alternative 2 requires that any ROW granted would be restricted to an existing utility corridor which consolidates any visual or vegetative disturbances that may occur.

Livestock trespass would be reduced. Livestock and public use conflicts would be reduced.

Alternative 3
Alternative 3 Wildlife and Habitat
Alternative 3 Threatened and Endangered Wildlife and Plants

Similar to Alternative 2; however, additional benefits as a result of reduced roads, reduced hunting pressure, and the elimination of commercial use. All of the above result in overall reduced disturbance to wildlife and decreased fragmentation of habitats.

Alternative 3 Wildlife

Similar to Alternative 2. Elimination of sage grouse, snipe, rail, and mourning dove hunts directly benefit these species and reduces overall hunting disturbance to all wildlife species. Reduction in length of the waterfowl hunt season will increase the availability of wintering resting/feeding areas for all wintering waterbirds. Areas hunted off-refuge may see increased hunting success as the Refuge sanctuary area may invite birds to remain in the local area.

Reduced roads, reduced hunting pressure, and the elimination of commercial use will reduce overall disturbance to wildlife and decrease fragmentation of habitats.

Alternative 3 Riparian

Similar to Alternative 2. Reduced fragmentation and disturbance as a result of decreased roads.

Alternative 3 Wetland

Similar to Alternative 2.

Alternative 3 Uplands

Similar to Alternative 2. Reduced fragmentation and disturbance as a result of decreased roads.

Alternative 3 Riverine

Similar to Alternative 2. Visitor use would decrease with the elimination of commercial/guided use of the River through the Refuge and overall reduction in roads open to public travel. This may result in reduced public use and subsequently reduce disturbance and damage to sensitive vegetation/wildlife inhabiting the river corridor.

Alternative 3 Invasive Species

Similar to Alternative 2.

Alternative 3 Public Use and Recreation

Alternative 3 Recreation

The effects of public use and recreation would be similar to Alternative 1. The elimination of commercial guided fishing or guided scenic tours, the prohibition of motorized watercraft, reduction in some hunting opportunities, and reduced public roads may displace guides, visitors, and motorized uses to other recreation destinations within the larger recreational region. The results of this change may be a reduction in the amount of angling, hunting, wildlife viewing, and in general, Refuge visitation. It may have a positive effect by providing a quieter recreational experience for non-commercial anglers and visitors as well as decreasing disturbance to wildlife and vegetation. Non-commercial anglers would not have to compete for launch sites, parking, or angling opportunities.

Alternative 3 Cultural Resources

Alternative 3 effects would be the similar to Alternative 1. The Refuge would continue to comply with all Federal and State laws and regulations. No new facilities would be built under Alternative 3, and resource protection would be reactive.

Alternative 3 Partnerships

Partnership opportunities would be similar to Alternative 2. Under Alternative 3, no minority or low income populations would be disproportionately affected by implementation of this Alternative.

Alternative 3 Administrative Management Concerns

Similar to Alternative 2; however, no opportunity to dispose of lands. Alternative 3 does not provide access to privately-owned minerals and assumes that they would be accessed from outside the boundary of the Refuge. If no surface occupancy were successfully applied, there would not be the potential for surface disturbance for extraction of privately-owned minerals.

Providing off-site watering would allow the closure of existing water gaps. The potential effects for livestock trespass would be further reduced and the efforts to enforce trespass would be minimal.

Table 2. Effects Matrix Comparison of Environmental Consequences

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Threatened and Endangered Wildlife and Plant What measures are taken to protect threatened, endangered, and candidate species and species of management concern?	Beneficial effects from habitat protection, limiting disturbance to individuals, provision of adequate food resources and limited population monitoring. Sensitive species dependent upon riparian shrub communities and riparian forest may experience degradation. No assurance that the riparian forest along the Green River would be preserved. Vegetation and riparian impacts from livestock, uncontrolled visitor access, and boat launching may continue.	Beneficial effects from habitat management and protection, limiting disturbance to individuals, provision of adequate food resources, surveying habitat and habitat quality. Regular monitoring of threatened, endangered, and candidate wildlife and plant species and wildlife species of management concern will increase their protection. Wintering waterfowl and trumpeter swans continue to benefit. Using temporary or permanent closures or both to prevent wildlife disturbance benefit all species of concern. Regeneration of cottonwoods achieved on new sites.	Same as Alternative 2. Except trumpeter swans may decrease use of the area for breeding if management is not directed towards this species.

Table 2. Effects Matrix Comparison of Environmental Consequences

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Wildlife What measures are taken to protect and manage native wildlife?	Management of existing wetlands and development of additional wetlands benefits trumpeter swans and numerous other wetland dependent species. Management of winter flows to maintain ice free waters will continue to benefit a variety of wintering bird and aquatic species. Lack of vegetative monitoring makes evaluation of management strategies difficult. Enhancement of portions of the riparian corridor would benefit a variety of avian and mammal species; however, riparian restoration efforts may be jeopardized without proper management of herbivores. Protection without active management of upland habitats may eventually result in degraded habitat conditions for the sage grouse and other upland species. Lack of monitoring in upland habitats for grouse and other species makes management programs difficult to develop and eventually evaluate. Current impacts from invasive species, uncontrolled visitor access, and the lack of public use monitoring may continue to impact all habitat types, thus reducing the quality of potential habitat for all wildlife and plant species.	Increased monitoring of vegetation in all habitat types will improve management decisions for trumpeter swans, grouse, migratory birds, deer, moose, etc. Initiation of population monitoring for grouse will facilitate development of management strategies for upland shrub habitats. Increased knowledge of browsing impacts will improve management of herbivores like deer and moose and support riparian restoration efforts. Reduction in designated open roads will reduce overall disturbance to wildlife and reduce fragmentation of habitats. Seasonal closure of some roads and eventual modification of closed areas will provided much needed resting areas for wintering waterfowl and may increase hunting success by holding waterfowl in the local area.	Similar to Alternative 2. Elimination of sage grouse, snipe, rail, and mourning dove hunts directly benefit these species and reduces overall hunting disturbance to all wildlife species. Reduction in length of the waterfowl hunt season will increase the availability of wintering resting/feeding areas for all wintering waterbirds. Areas hunted off-refuge may see increased hunting success as the refuge sanctuary area may invite birds to remain in the local area. Reduced roads, reduced hunting pressure, and the elimination of commercial use will reduce overall disturbance to wildlife and decrease fragmentation of habitats.

Table 2. Effects Matrix Comparison of Environmental Consequences

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Riparian How will riparian habitat losses be mitigated to support migratory birds and native wildlife species? A3. Issue: How will riparian habitats be managed to support migratory birds?	Negative effects to the riparian habitat from channelizing, lower peak flows and timing changes in restricted flows, and ice scouring. Riparian forest continue to age, be in poor health compared with the upstream forest above Fontenelle Reservoir; be simpler in structure and have insufficient regeneration to establish new age classes and may continue to be highly vulnerable.	Alternative 2 provides the greatest benefit of the alternatives to the riparian forest, migratory birds, and native wildlife species. Increased and timely water availability, and increased habitat and wildlife management would ensure protection and regeneration of cottonwoods and a healthier community will improve the health of existing trees and willows.	Same as Alternative 2.
	Degradation of riparian forests impacts migratory bird species. Planting of understory woody shrub would increase the shrub cover for wildlife and migratory birds. Riparian habitat may continue to be negatively effected by the insufficient control of browsers.	Change in flow regime may have negative effects on power production at Fontenelle and the frequency of flooding at Green River, Wyoming. Maintaining the large diameter trees, snags and dead trees would enhance breeding habitat and benefits raptors, great blue herons and cavity nesters and enhance foraging availability.	Same as Alternative 2.
Wetlands How will wetland losses be mitigated to support migratory birds and native wildlife species? How will wetlands be managed to support migratory birds and native wildlife species? How are predators and nuisance species controlled?	Benefit migratory and breeding habitat for waterfowl, shorebirds, and wading birds. Moderate negative effects from weeds and predators and nuisance in nesting areas continue. With limited wildlife and waterfowl production monitoring, the degree of success unmeasured. Restoring historic oxbow river channels may provide additional spring migration, breeding, or fall migration habitats.	Benefits migratory and breeding habitat for waterfowl, shorebirds and wading birds. Periodically drawing down tall emergent vegetation and open water habitat may maintain wetland productivity. Drawing down short emergent vegetation for fall migration may have a positive effect on shorebirds, wading birds, and dabblers. Extensive monitoring of the vegetative recovery and the kinds and numbers of species using the areas would occur to measure management effectiveness.	Same as Alternative 2.

Table 2. Effects Matrix Comparison of Environmental Consequences

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Upland How would upland shrub and grassland habitat be managed to support native wildlife species and migrating birds?	The Dry Creek Unit which is fenced and free of grazing by domestic livestock has resulted in an upland system closer to approximation of natural conditions (prior to introduction of grazing in the last century) than anywhere else in the immediate region. This system should be vital to and supporting of native wildlife species and migratory birds. Habitat may tend to become a similar age class diminishing habitat diversity and beneficial use by native species and migratory birds. Invasive greasewood and sagebrush would continue to become dominant over more important forage plants.	Providing a diverse mix of upland desert shrub and grassland habitat and increased protection of this habitat may have positive effects for wildlife. Protecting existing stands of tall sagebrush in woody draws from unplanned disturbance may provide crucial thermal cover and foraging areas for winter sage grouse, pygmy rabbit, antelope, and mule deer. Converting the Hay Farm Management Unit to a upland mixed grass habitat type would benefit grassland species.	Same as Alternative 2.
	The 350 acres in the Hay Farm Management Unit would remain as a mix of grasses and annual weedy forbs.	Using small controlled burns should realize a conversion of greasewood stands to an early successional state providing a variety of successional stages. Using prescribed fire in emergent wetlands would maintain open water and could rejuvenate decadent stands of grasses and other vegetation. Restricting the use of fire in floodplain forest habitats may have a positive effect on cottonwoods. Management of uplands should result in a greater variety of upland habitats available for native wildlife species and migratory birds. Long-term monitoring should show the measure of success.	Same as Alternative 2. Same as Alternative 2.

Table 2. Effects Matrix Comparison of Environmental Consequences

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Riverine How are fisheries managed on the Refuge	Ice-free water continues to benefit the tri-state population of trumpeter swans, bald eagles, and wintering waterfowl. Minimal negative effects to littoral zones. Rock sills provide beneficial habitat for fishery.	Similar to Alternative 1; however, overall negative effects to the fishery should diminish. Implementing a minimum 500 cfs winter flow would ensure open water is available in winter for wintering fish and wildlife. Monitoring wildlife, visitor use, and population trends in roundtail chubs, flannel-mouth suckers, and trout would evaluate management effectiveness.	Same as Alternative 2.
Weeds To what extent are weeds (invasive, nonnative plants) controlled?	The invasion of several nonnative plants continues to threaten wet meadows and adjoining riparian areas. Weeds provide cover for predators, and there is a loss of beneficial forage, cover and plant diversity. Under Alternative 1 weed control is addressed at a basic maintenance level and large stands are not reduced and restoration of weed-dominant habitats would not occur.	Attempts to decrease the Refuge's dependence on chemical control of weedy plants may have a positive impact on wildlife. However, it may increase the spread of certain weeds. Developing partnerships may have a positive effect by decreasing the encroachment of salt cedar from adjacent lands.	Negative effects could occur from the continued spread of noxious weeds in the Refuge and the spread of salt cedar from adjacent lands. Weeds may continue to compete with more desirable wildlife cover and forage.

Table 2. Effects Matrix Comparison of Environmental Consequences

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Public Use and Recreation	No change in public use and recreation experience in the short-term. Effects of use may be evident in increased damage to vegetation, fisheries, water quality, soils, and visual quality. These impacts would result from a reduced emphasis to control human use, vehicles, boat launch sites, and lack of site planning for future facilities.	Changes in recreation experience occur. River access improvements enhance habitats, water quality, fisheries, and visual quality. Modifications to conduct or improve public use opportunities such as hardening roads, reducing roads, improving ramps, and development of trails, interpretive information, and other amenities would not substantially detract from the larger natural setting.	The effects of public use and recreation would be similar to Alternative 1. Some recreation and public uses (guided trips, hunting of select species) are displaced to other recreation destinations within the larger recreational region. May be a reduction in the amount of angling, hunting, wildlife viewing and in general, the displacement of visitors. Positive effects are a quieter recreational experience for non-commercial anglers and visitors as well as decreasing disturbance to wildlife and vegetation. Non-commercial anglers would not have to compete for launch sites, parking or angler opportunities.
Wildlife Viewing and Photography To what extent are opportunities provided for wildlife viewing and photography?	The majority of roads including the auto-tour route would continue to be seasonally impassible. No unique accommodations for the wildlife photographer.	Wildlife auto-tour route accessible year-round. New wildlife viewing and photography opportunities provided via pullouts. Greater exposure for a larger spectrum of people to habits within the Refuge.	Similar to Alternative 1; however, the reduced number of roads may reduce viewing/ photography opportunities for individuals which do not hike and improve opportunities for others due to less disturbance by vehicles.

Table 2. Effects Matrix Comparison of Environmental Consequences

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Hunting What types of hunting opportunities are provided on the Refuge? Recreational Trapping. What types of recreational trapping are allowed on the Refuge? Sport Fishing What types of sport fishing opportunities are provided on the Refuge?	With the hunting and angling populations there is a positive public relations effect as they gain an appreciation for the refuge as a resource. Some benefit to nesting waterfowl from predator trapping. Improved angler opportunities for non-commercial anglers as commercial use is reduced via attrition.	Creation of a new closed area via a separate public process may improve waterfowl hunting opportunities but limit some winter fishing and floating opportunities. All winter wildlife would benefit from a new type of closed area which includes the river. Establishment of new closed area may improve hunting opportunities by attracting birds onto the Refuge and maintaining local populations. People with disabilities would be provided opportunities to participate in hunting/angling. Improved trapping operations would benefit ground nesting species. Improved angler opportunities for non-commercial anglers as commercial use is reduced via attrition.	Similar to Alternative 2; however, hunting opportunities for select species would be reduced. Establishment of new closed area similar to Alternative 2. Fishing opportunities would be decreased without commercial operations. This may limit accessibility of anglers with disabilities and improve opportunities for non-commercial users. Trapping opportunities similar to Alternative 2.
Commercial Guide Fishing/ Floating Is commercial guide fishing/ floating allowed and how is it managed? Camping Is camping allowed, and if so, where and how are sites developed and the use managed? Boating Is boating allowed on the River through the Refuge?	There is a slow reduction in commercial guide fishing /floating as permits are reduced via attrition to four or less. Unimproved and undesignated parking, boating, and angling access, and unauthorized camping would continue to have an impact on sensitive vegetation and wildlife. Without a comprehensive fishing and hunting leaflet, the public may continue to be confused about areas open for hunting and special regulations for fishing. The visual condition has been impacted and continued damage to existing vegetation from off-road vehicle use and dispersed public use would continue. Camping is not permitted and is diverted to other off-refuge sites.	Restricting and standardizing the number of permits for commercial use may add stability to the fishing program, and provide a better experience and more protection for the resource. However, the limitations set on commercial use may improve the quality of the recreation experience but increase demand for permits. The development of a comprehensive fishing and hunting leaflet would enhance the visitor experience and the increased law enforcement patrols should realize beneficial effects from more compliance. Camping is not permitted and is diverted to other off-refuge sites.	Commercial guides and uses would be displaced to other recreation destinations within the larger recreational region. Displacement of commercial visitors and reduction of angling, wildlife viewing may occur providing a quieter recreational experience for non-commercial visitors as well as decreasing disturbance to wildlife and vegetation. May decrease opportunities for persons with disabilities to recreate. The development of a comprehensive fishing and hunting leaflet similar to Alternative 2. Camping is not permitted and is diverted to other off-refuge sites.

Table 2. Effects Matrix Comparison of Environmental Consequences

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
	Barring motorized craft would reduce impacts to habitats and wildlife.	Creating a no-wake zone would reduce disturbances to habitats and wildlife.	Same as Alternative 1 - Barring motorized craft would reduce impacts to habitats and wildlife.
Visitor Use Level What is the appropriate visitor use level of the Refuge?	Without monitoring of public use on refuge resources, it is difficult to quantify the impact of the use on sensitive species. Disturbances to wildlife may continue at inappropriate levels and visitor experiences may diminish without monitoring.	The monitoring of general public use of refuge resources would guide future use levels on the refuge so the purpose and mission of the refuge is not compromised and the overall visitor experience is protected.	Same as Alternative 2.
Access Management How is access/travel managed on the Refuge? River Access How is river access managed? Universal Access To what extent is universal access to public use facilities and activities provided?	Current impacts from uncontrolled visitor access and boat launching may continue to impact sensitive vegetation and riparian areas. New roads continue to be established. Additional signs and updated brochures may assist the visitor and protect habitats. Additional law enforcement patrol may minimize access conflicts. There are no new universally accessible opportunities.	Visitor access, vehicles and boat launching is controlled having a positive effect on vegetation, wildlife, visual resources, and the visitor experience. Existing boat launch facilities are enhanced. Opportunities for universal access and experiences are expanded. Reduction in roads may limit some direct access to River by vehicles. All areas remain open to foot travel.	Similar to Alternative 2; however, with further reduction in roads, the elimination of commercial users, and prohibited use of motorized boats, impacts to wildlife and their habitat could be reduced. Similar to Alternative 1; no new universally accessible opportunities. Direct access opportunities by vehicle to certain parts of the Refuge are reduced. All areas remain open to foot travel.

Table 2. Effects Matrix Comparison of Environmental Consequences

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Environmental Interpretation and Education *Environmental Interpretation* To what extent are opportunities pursued to interpret natural resources, especially wildlife and their habitat for the visiting public? *Environmental Education.* What type of environmental education program is provided to the public?	Educational interpretation would continue to rely on "self guided" tours of the Refuge. Without an ongoing education program, an understanding of and appreciation for wildlife and other natural resources of the Green River basin is not nurtured.	Positive effect from informing visitors of the importance of plants and wildlife in the human history of the area. The quality of the educational experience on the refuge improves with the interpretive trails and panels along the auto-tour. Visitors gain a greater appreciation and understanding of the refuge, wildlife, and people's role in the environment with addition of a visitor/education center.	Same as Alternative 1.
Resource Protection *Public Information* How is information on the Refuge, its resources and regulations provided and what are the effects?	Communication informal. Hunters, anglers, wildlife viewers, and the youth would benefit most from available information. Location of facilities and use determined by where the use is occurring.	Clustering public use facilities benefits vegetation, wildlife, visual resources and management. Improved brochures and availability of information should reduce impacts to resources. Overall reduction in open roads and increased law enforcement improves communication of Refuge regulations and protects resources and visitor safety. Improved directional signing would also reduce impacts.	Similar to Alternative 2; however, greater protection afforded by reducing roads and eliminating commercial use.
Cultural Resources How are cultural resources protected? To what extent are opportunities pursued to interpret cultural resources for the visiting public?	Little direct protection or stabilization occurs for historic sites. Resource protection would largely be reactive. Any interpretation of Native American history would have a positive effect expanding the public knowledge of the history of the Green River Basin.	The effects would be similar to Alternative 1; however, the approach would be proactive. Significant cultural resources (historic and prehistoric) would be preserved and protected. A positive effect from recording and avoiding cultural resources. The character of the historic viewshed maintained. Addition of a trail at Lombard Ferry may improve the visitor experience and increase use of area. Additional visitation may disturb wildlife. Monitoring use will assist management of site.	Same as Alternative 1.

Table 2. Effects Matrix Comparison of Environmental Consequences

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Partnership To what extent are partnership opportunities pursued with volunteers, local service groups, organizations, individuals, schools, and other governmental agencies?	Partnerships and volunteer programs continue on an as-needed permits basis. Recruiting, training, and supervising volunteers would be managed by existing staff and compete against day-to-day responsibilities.	Partnership and volunteer programs are more developed and result in a higher quality experience and improved understanding of the Service's mission, the mission and goals of the refuge system and the purpose and goals of Seedskadee NWR.	Same as Alternative 2.
Administrative Management Concerns Land Acquisition. Is further land acquisition or land disposal planned?	The purchase of the remaining 5 acres would result in Seedskadee NWR owning all lands within their boundary and preclude any land management conflicts with private landowners.	Similar to Alternative 1 and ensures that the Refuge would be able to meet their purpose and address unknown future needs. However, if new lands were acquired, there would be impacts on budgets and management.	Same as Alternative 2.
Minerals How will privately-owned minerals be developed?	Under Alternative 1 mineral exploration and development may occur. It is difficult to determine the extent of potential change to occur (roads, drill pads or pipeline) if reasonable access were to occur.	Under Alternative 2, mineral exploration and development would be similar to Alternative 1; however, no surface occupancy would be allowed if they could be otherwise accessed. Impacts unknown.	If no surface occupancy were successfully applied, there would not be the potential for surface disturbance for extraction of privately owned minerals.
Right-of-Way What is the Refuge's policy toward requests for grants of ROW across the Refuge?	If a right-of-way were approved, there would be changes in habitat on the right-of-way itself. Potential erosion and soil loss may occur until reclamation is achieved on the right-of-way. Short-term impacts may occur to the fishery depending on means of crossing the Green River.	Alternative 2 requires that any ROW granted would be compatible with refuge purposes and if allowed restricted to an existing utility corridor which consolidates any visual or vegetative disturbances that may occur.	Same as Alternative 2.

Table 2. Effects Matrix Comparison of Environmental Consequences

Issue Questions	Alternative 1 - No Action	Alternative 2 - Preferred Alternative	Alternative 3
Livestock Access How is access to water for livestock provided? Grazing Is grazing allowed on the Refuge? What is the Refuge doing to prevent livestock trespass?	Refuge provides 14 access lanes for livestock. Domestic livestock trespass would continue to occur largely through water lanes. There are no changes in the grazing policies.	Refuge provides 14 access lanes for livestock. Livestock trespass would be reduced. Grazing not permitted.	Effects from livestock trespass would be further reduced and the efforts to enforce trespass no longer required. Grazing not permitted.

Chapter 5. List of Preparers

The list of preparers is found in Appendix I.

Chapter 6. CCP Goals and Objectives

Chapter 6 of the EA incorporates by reference Chapter 4 - Refuge Goals and Objectives - of the CCP.

Appendix J. Section 7

Intra-Service Section 7 Consultation has been initiated with the Cheyenne Field Station and will be completed prior to final approval of the Plan.