Hanford Reach National Monument
Saddle Mountain National Wildlife Refuge
Wildlife and Habitat Management Review

U.S. Fish and Wildlife Service
National Wildlife Refuge System
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I. Introduction

The mission of the U.S. Fish and Wildlife Service (Service) is *"...working with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people*" (NPI 99-01). In order to address the mission and its extensive array of statutory responsibilities, the Service implemented an ecosystem approach to fish and wildlife management. The goal of the Service's ecosystem approach is "*...as the Service, working closely with others, carries out its mission and mandates, it will constantly strive to contribute to: the effective conservation of natural biological diversity through perpetuation of dynamic, healthy ecosystems*" (052 FW1.3B{1}).

In support of the Service's mission, the National Wildlife Refuge System Administration Act of 1966, as amended (16 U.S.C. 668 dd-668ee, recently amended by the National Wildlife Refuge System Improvement Act of 1997 - Improvement Act [052 FW1.3B{1}]), specifically directs the Service to "*...provide for the conservation of fish, wildlife, and plants within the System; ensure that the biological integrity, diversity, and environmental health of the System are maintained for the benefit of present and future generations of Americans..." and "... monitor the status and trends of fish, wildlife, and plants in each refuge."* The mission of the National Wildlife Refuge System is *"...to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans."* In addition, each refuge should support the following System goals (DO 132):

- Fulfill our statutory duty to achieve refuge purpose(s) and further the System mission.

- Conserve, restore where appropriate, and enhance all species of fish, wildlife, and plants that are endangered or threatened with becoming endangered.

- Perpetuate migratory bird, interjurisdictional fish, and marine mammal populations.

- Conserve a diversity of fish, wildlife, and plants.

- Conserve and restore where appropriate representative ecosystems of the United States, including the ecological processes characteristic of those ecosystems.

- Foster an understanding and instill appreciation of native fish, wildlife, and plants, and their conservation, by providing the public with safe, high-quality, and compatible wildlife-dependent public use. Such use includes hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

Adjustments are made to refuge wildlife and habitat management programs (adaptive management) based on periodic evaluations. Most refuges annually use an informal approach to adaptive management to make adjustments in programs. However, there is a need to occasionally conduct more formal evaluations to ensure refuge management programs are consistent with national,

regional, ecoregional, and administrative policies; and reflect consideration of current scientific knowledge. These evaluations are needed to provide accountability and feedback and to determine if wildlife and habitat management goals and objectives are being met at all levels. Regional Office biological staff conduct refuge reviews for specific management programs (e.g., grazing, wetland, farming), the overall program, or entire refuge operations. These reviews identify key wildlife and habitat management issues that are often used during preparation of comprehensive conservation plans. Refuge managers, biologists, and Service personnel from other divisions within Region 1; as well as experts from other agencies (state, federal, county, tribes); universities; and the private sector that have expertise regarding the subject(s) of the review assist with conducting these reviews.

II. Purposes of Review

This report summarizes the findings and recommendations from an evaluation of the wildlife and habitat management program conducted by a review team during June 3-7, 2002 at Hanford Reach National Monument/Saddle Mountain National Wildlife Refuge (Monument/SMNWR). Its purposes were the following: 1) determine if the wildlife and habitat management program supports Monument/refuge purposes as well as the Improvement Act and Service policies regarding fish and wildlife management; 2) identify short- and long-term visions for habitat and wildlife management; 3) identify measures, if needed, that would improve wildlife and habitat management as well as contribute to ecological integrity of the System from local, regional, ecosystem, and national scales; 4) identify monitoring needs required to implement adaptive management; and 5) identify staffing/equipment needs required to optimize management to accomplish/address the highest biological and habitat management recommendations. **The following recommendations were formulated by the core review team members (Appendix) during the site visit.**

III. Monument and Refuge Purposes

The Improvement Act states that each refuge will be managed to fulfill refuge purpose(s) as well as to help fulfill the System mission. We will accomplish these purpose(s) and our mission by ensuring that the biological integrity, diversity, and environmental health of each refuge are maintained and, where appropriate, restored. The Monument was established through Presidential Proclamation 7319 (Executive Order) on June 13, 2000. Within the Proclamation, the following resources specifically were described for protection and management on the Monument and adjacent lands: the largest remnant of shrub-steppe within the Columbia River Basin; the 51-mile stretch of the Hanford Reach; breeding populations of shrub-steppe dependent birds; and geological (White Bluffs and Dunes) and paleontological objects. In addition, the Proclamation clearly identifies specific species, species groups, and communities of management importance for the Monument. The resources identified in the Proclamation are equivalent to refuge purposes as identified in the Improvement Act and they will be used to guide management and determine compatibility for refuge uses. SMNWR was established with following purpose: *"...for the development, advancement, management, conservation, and protection of fish and wildlife resources..." "...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or conditions of servitude..."* (19 U.S.C 742f(b)(1)(Fish and Wildlife Act of 1956, 16 U.S.C. 742(a)-754, as amended).

IV. Biodiversity

The Monument/SMNWR is located within the Columbia Basin Ecoregion, which historically was covered with over 14.8 million acres of steppe and shrub-steppe across most of central and southeastern Washington. Pre-settlement vegetation was characterized by shrubs, perennial bunchgrasses, forbs, and microbiotic crust (lichens, moss, fungi, bacteria, and algae). Within the state, shrub-steppe habitat is a Priority Habitat as a result of its scarcity and importance to shrub-steppe obligate species. The US Department of Interior identified native shrub and grassland steppe in Washington and Oregon as an endangered ecosystem. These habitats have also been identified as priorities in the Partners In Flight (PIF) Conservation Strategies for Landbirds in the Columbia Plateau of Eastern Oregon and Washington. An estimated >60% of shrub-steppe in Washington has been permanently converted to agriculture or other uses with the remaining habitat as small parcels in shallow rocky soils or areas degraded by historic land uses such as livestock grazing. During the Nature Conservancy's biodiversity inventory on the Monument/SMNWR, a total of 17 terrestrial and 6 riparian wetland plant communities were identified as "element occurrences", which are identified by the Washington State Natural Heritage Program as plant communities retaining intact assemblages of species not found elsewhere in the state. The riparian/wetland communities along the Hanford Reach are rare elsewhere within the Columbia Basin as a result of hydropower development. These communities (especially riparian and shrub-steppe) support a diverse assemblage of wildlife (43 fish species, 40 mammalian species, 246 avian species, 11 reptilian species, 4 amphibian species, and over 1500 invertebrate species of which 40 are new to science) and native plants (112 populations of 30 rare plant taxa, including two new species [White Bluffs bladderpod and Umtanum desert buckwheat]).

The 195,000-acre land base of the Monument/SMNWR is biologically significant because of its plant community diversity, assemblage of species, and habitat conditions that are representative of pre-settlement conditions. Its size contributes to its ecological value because the area could support viable populations of certain unique or declining populations.

V. Goals and Objectives

Identifying management/restoration priorities of the Monument/SMNWR should begin by defining management required to meet Monument and refuge purposes, System mission, and goals followed by an assessment of the wildlife and habitat needs at multiple landscape levels. After these priorities have been identified at the larger landscape scale, the contribution that Monument/SMNWR can make toward these landscape priorities should be identified. Management constraints should be identified for these priorities and conflicts regarding their management resolved (e.g., fire suppression and management/restoration of shrub-steppe).

There is a tendency to attempt to manage for all high priority species, species groups, and communities at each unit of a refuge while developing habitat and wildlife plans (CCPs and habitat management plans). This approach often results in conflicts among management strategies on the same unit(s) while trying to provide for the diverse needs of many species. By defining management required to meet Monument/SMNWR purposes and then stepping down landscape priorities to the

Monument/SMNWR level, locations that are most appropriate on refuge units to implement management strategies can be identified. In selecting these locations, it is important to consider connectivity as well as functions, processes, structure, and composition required to maintain healthy sustainable communities.

Goals and objectives identify and focus management priorities, provide a context for resolving issues, and offer a defensible link among management actions, refuge purpose(s), and the NWRS mission. Goals and objectives should be prepared in accordance with guidance provided in *Writing Refuge Management Goals and Objective: A Handbook*. In developing goals and objectives, there is a natural progression from the general to the specific. Goals, which define general targets supporting the refuge vision, are followed by objectives directing efforts toward incremental and measurable end points. Objectives provide a foundation for determining strategies, monitoring refuge accomplishments, and evaluating success. The number of objectives per goal will vary, but they should be those necessary to satisfy the goal. Finally, strategies (and more specifically actions) identify specific tools to accomplish objectives. There are five properties (SMART criteria) of a well-written objective: (1) Specific; (2) Measurable; (3) Achievable; (4) Results-oriented; and (5) Time-fixed. Probably the most critical property of an objective is specificity that includes WHO will do the action, WHAT we will do, WHEN and WHERE we will do it, and WHY we will do it.

Throughout this report, high-priority management species, species groups, vegetation communities, and key wildlife/habitat management issues to be considered during the development of the CCP have been identified. Goals and objectives for these priority resources will be developed during the CCP process.

Consider dividing the Monument into discrete administrative units that will facilitate identification of areas to apply strategies to meet refuge objectives. The following factors may be used to delineate subunits within each of the major areas of the Monument (ALE Unit, SMNWR, and Wahluke Unit) under Service jurisdiction and management: geographical features (e.g., roads), fire management, biotic/abiotic characteristics (plant community maps along with TNC protocols), river corridor, cultural resources, public use, law enforcement. Consider using names with cultural significance for the area in nomenclature for managed subunits on the Monument.

VI. General Issues and Recommendations

A. Shrub-Steppe Conservation and Management

The Monument/SMNWR retains some of the largest remaining blocks of relatively undisturbed shrub-steppe in the Columbia Basin Ecoregion. However, the 24 Command Fire (June 27, 2000) burned approximately 78,000 acres of Service-managed lands. Because of the intensity of this fire approximately 10,000 acres of diverse shrub/grass/forb communities were impacted. These burned areas are targeted for habitat rehabilitation and restoration. The majority of the burned area is slowly naturally recovering from the fire. Shrub-steppe habitat is still represented on the North Slope (Wahluke Unit and SMNWR), but these communities are generally more degraded with some areas dominated by an invasive species understory.

1. Issue: Connectivity of the Monument/SMNWR with adjacent state, federal, tribal, and private shrub-steppe habitat

Although modified by recent and historic fires, invasive species, and historic grazing, several of the shrub-steppe plant communities (e.g., big sagebrush/bluebunch wheatgrass and bitterbrush/Indian ricegrass) found on the Monument/SMNWR are regionally significant. A major management issue regarding shrub-steppe is the restoration and connection of communities on the Monument/SMNWR with those on adjacent lands improving ecosystem functionality supporting shrub-steppe obligate species.

a. Maintain existing shrub-steppe habitat and promote connectivity of the Monument with habitat for sagebrush obligate species (e.g., sage grouse, sage sparrow, Brewer sparrow, loggerhead shrike) on adjacent lands through partnerships with the following state, federal, and tribal lands: BOR Scattered Tract Lands, WDFW Crab Creek Wildlife Management Area, Columbia NWR, Eagle Lakes, Yakima Training Center (YTC), Yakama Indian Reservation, and WDFW land north and east of YTC. Connectivity on a larger landscape level (supported by the FACA committee, WDFW, YTC, and PIF) is essential to promote recovery of sage grouse and other declining shrub-steppe obligate species.

b. Maintain and promote intra and interagency coordination to protect and improve connectivity of sagebrush habitat.

c. Coordinate and comment during the development of EISs with responsible state, tribal, federal, and private entities for the proposed development of the windpower farm at McGee Riverlands Ranch, BPA power lines (across McGee Ranch), and Blackrock Reservoir projects to ensure that connectivity between McGee Riverlands Unit and the Fitzner-Eberhardt Arid Land Ecology (ALE) Reserve and YTC is not further threatened or impacted.

d. Explore opportunities to protect/promote connectivity with the North, McWhorter, and other properties that lie between the McGee Riverlands Ranch and YTC. Work with private land owners in projects supported by the USDA Farm Bill or other sources to protect and enhance shrub-steppe habitat on adjacent lands (e.g., CRP projects). Acquisition through Grant County PUD associated with the FERC relicensing (see Section V.B) may be an option.

2. Issue: Restoration of shrub-steppe

Historically, shrub-steppe was a mosaic of shrubs and grasses/forbs that was dynamic in nature depending upon precipitation and fire. Fires were historically small relative to the contiguous, surrounding shrub-steppe habitat and they contributed to the mosaic of shrubs and grass/forbs by creating small openings. Because of the degradation of shrub-steppe habitat, the natural 70- to 120-year fire interval has been decreased to approximately 3- to 6-years. The cheatgrass understory and current fire return intervals have resulted in hot, fast-moving, catastrophic fires that destroy fire-sensitive sagebrush. Without fire suppression and aggressive initial attack capabilities, sagebrush

shrub-steppe will continue to be lost. Increased fire frequency and the spread of cheatgrass understory will continue to increase the loss of the remnant shrub-steppe to catastrophic fires.

a. In areas where shrub-steppe is lost as a result of fire (e.g., 24 Command Fire), priorities for restoration should be sagebrush and high quality grasslands. Because areas with the greatest probability for successful sagebrush re-establishment will also be the best sites for grassland restoration, a balance of these two habitat types should be managed to adequately represent components of a functional shrub-steppe ecosystem. In addition, restored grassland areas will deter infestations of invasive species allowing for natural succession to shrub-steppe.

b. Because sagebrush re-establishment is a costly, long-term investment for the Monument in terms of staff time and funding, it's imperative to identify those areas with the greatest likelihood of success to focus upon for restoration. Within these selected areas, identify sites with appropriate abiotic conditions (soils, elevation, and moisture) for sagebrush re-establishment. A high priority for sagebrush restoration is the protection and expansion of existing blocks of healthy sagebrush that eventually will coalesce to provide functional vegetation communities for sagebrush obligate species (e.g., sage sparrows) as well as address connectivity issues for wide ranging species such as sage grouse.

c. When selecting sites for restoration, inventory the vegetation and wildlife to determine the functionality of the area. Restoration should follow a priority criteria. First priority should be given to areas with high-quality understory that lack only shrubs. Restoration may be accomplished using shrub plantings. Second priority should be assigned to areas that are highly disturbed with no/very few native plants. Use of disking/herbicide/native seeding and shrub planting could be utilized. A lower priority for restoration should be given to areas where shrubs provide adequate structure and function that support native wildlife communities but understories have been degraded. Full-scale restoration efforts should focus upon on areas with no or few native species present.

d. Conduct research and/or monitoring on techniques for re-establishment of sagebrush on a small scale using replicates representative of the range of habitat and abiotic conditions appropriate for restoration on the Monument/SMNWR. Enlist universities, researchers, graduate students, and private interest groups in this effort.

e. Inform the public about the importance of shrub-steppe restoration efforts on the Monument in terms of its contribution to biological integrity and diversity. It is also important for the public to understand that the Monument staff is developing restoration techniques that hopefully will improve the current success rates (20%) for sagebrush re-establishment. By doing so, the Service will gain public support for shrub-steppe restoration while minimizing public concern over failure to restore large blocks of shrub- steppe.

3. Issue: Synthesize/organize existing data

For six decades the DOE has conducted extensive research and inventories throughout the Monument and adjacent lands in conjunction with operations on the Hanford Site. This data exists in many and varied locations within federal, state, and private contractor repositories. In order to evaluate existing resource data, a consolidated data repository is needed. This repository will facilitate the identification of data gaps and prioritize other necessary inventories and assessments.

a. Develop a data/resource inventory library and repository for historic and current resource information from private, state, and DOE sources. Organize and synthesize existing data to determine future data needs.

b. Compile current mapping and inventory data on vegetation resources, critical habitat, and sensitive areas.

c. Determine existing data gaps and identify sensitive areas so that additional inventories and surveys can be conducted.

B. Hanford Reach Ecology

The Hanford Reach encompasses the last non-tidal, free-flowing segment of the Columbia River in the United States. However, water flow is regulated by the Priest Rapids Dam for production of hydropower, resulting in daily water fluctuations of up to12 feet. These fluctuations have resulted in stranding and mortality of juvenile anadromous and resident fish species. Forty-three species of fish have been documented in the Reach, including salmonid stocks. Specifically, 80% of all mainstem Columbia River spawning fall chinook breed in the Hanford Reach. This economically and culturally significant stock of fall chinook is a principle component of the international and Pacific Salmon Treaty between the United States and Canada. Upper Columbia River spring chinook as well as middle and upper Columbia River steelhead, which are federally listed species, use the Reach during migration. Additionally, breeding populations of white surgeon inhabit the Reach. The riparian/wetland communities along the Hanford Reach are some of the least represented habitats for this river system and elsewhere within the Columbia Basin; they provide important stop-over habitat for migratory land and waterbirds, and perhaps were important historically for breeding riparian-dependent species. These communities are also important wintering habitat for bald eagles, white pelicans, and many waterfowl species such as mallards, green-winged teal, pintails, goldeneye, gadwall, and buffleheads. The Reach also provides important nesting and breeding habitat for shorebirds, waterfowl, and other aquatic birds.

1. Issue: Relicensing under FERC

To conduct hydropower operations at Priest Rapids Dam on the Columbia River, Grant County is required to maintain a valid Federal Energy Regulatory Committee (FERC) license. The existing license, which has been in place since the early 1950s, will expire within the next 3 years. Consequently, Grant County must submit its final license application by October 2003 in order to

continue operation. In addition, the Vernita Bar Agreement must be either renewed or replaced concurrently with the FERC license. This agreement, which involves several public utility districts, federal agencies, and tribes, specifies flow regimes and variations in water levels to "protect" salmon from the effects of hydropower operations at Priest Rapids Dam.

a. Coordinate with other Service divisions (Federal Columbia River Power System [FCRPS], Fisheries, NWRS, ES, MBHP, and Engineering-WRB) as well as tribes and multiple federal (ACOE, NMFS, USGS, and DOE) and state agencies (e.g., WDFW, ODFW, ADFG) to identify and prioritize information gaps in response to the final application for renewal of the FERC license must be submitted by October 2003. Assist with the identification of a lead Service contact for this multi-agency group. Provide input into the FERC relicensing process to establish terms and conditions for the protection and enhancement of anadromous and resident fish habitats, important riparian/wetland habitats, and the aquatic ecology of the Reach.

b. Coordinate with the aforementioned (section II.B.1.a.) Service divisions and agencies to complete the following assessments of impacts resulting from water manipulations and fluctuations associated with hydropower production: completion of the 2-D hydraulic model to quantify the effects of water level manipulation and variation from hydropower generation on resident and anadromous fish habitat and aquatic invertebrates; quantify the mortality of juvenile fall chinook from stranding and entrapment that results from water level fluctuations; infestation of invasive species (e.g., loosestrife, phragmites, saltcedar, mulberry); loss of riparian habitat (willow and cottonwood) at normal highs; sedimentation of backwater areas; impacts to wildlife including nesting aquatic migratory birds (e.g., herons, gulls, Canada geese, landbirds), other native fishes (e.g., Pacific lamprey, sand roller, sculpin), and mammals (e.g., deer, mink, beaver, otter); impacts to rare plants (*Rorippa columbia*); impacts to archaeological resources on islands exposed from erosion; and flushing of nuclear and chemical contaminants including but not limited to cobalt-60, strontium-90, and chromium along the river bank.

2. Issue: Wild and scenic river study area

Under Public Law 100-605, Congress authorized the Secretary of the Interior to conduct a study of the Hanford Reach and surrounding lands to determine conservation options. As the last free-flowing non-tidal stretch of the Columbia River remaining in the United States, Congress further directed that one of the options considered be designation under the Wild and Scenic Rivers Act (WSR Act; Public Law 90-542, as amended). As directed by the Secretary of the Interior during 1994, the NPS determined that the Hanford Reach was eligible and suitable for designation as a national wild and scenic river. The NPS found that the Hanford Reach was free-flowing as defined by the WSR Act and that it supported the "outstandingly remarkable values" necessary for designation. The seven categories of nationally significant values supported by the Hanford Reach include the fall chinook salmon run, an intact ecosystem, Native American cultural resources, archeological sites, unique hydrology and geology, rare plant species, and rare animal species.

Under the WSR Act, rivers are classified according to their level of development at the time of designation. In the case of the Hanford Reach, if the river were designated, its classification would be "recreational" as defined by the WSR Act due to the evidence of human impact on the landscape.

a. According to Department of the Interior guidelines, the FWS is obligated to manage the Hanford Reach so as not to negatively impact its potential addition to the National Wild and Scenic Rivers System until such time as Congress acts on the NPS study, or subsequent analysis finds the river either not eligible or suitable for designation. Consequently, the FWS must manage the river so as not to impact its free-flowing character or negatively impact the river's outstandingly remarkable resources.

b. Identify the appropriate level of public use under the "recreational" WSR Act classification that will protect important fish and wildlife resources of the Reach.

3. Issue: Public use

The 51-mile Hanford Reach is open to the general public for fishing and boating, except for a closure for waterfowl hunting season between the wooden power poles and Vernita Bridge. Although this river segment is open to recreation, there is a concern regarding the current level of disturbance to migratory birds (e.g., heron rookery) associated with boating activities. During the hunting season, closure of the White Bluffs boat launch provides defacto sanctuary for up to 40,000 geese and 80,000 ducks that is important after wetlands within the Columbia Basin freeze over.

a. Because the Service does not have sole authority, partnerships should be developed with local, state, and federal agencies as well as tribes to regulate public access. A public access plan in partnership with other state and federal agencies through an evaluation of impacts (e.g., boating impacts to shore zone and disturbance to migratory birds) to the river corridor associated with current and future increased recreational use above and below the Hanford Reach should be developed.

b. Because river traffic causes disturbance to migratory birds (e.g., heron rookeries and gull colonies) along the river corridor, interpretative panels should be installed at boat launches to educate the public about ways to minimize disturbance. Also, coordinate with ACOE on placements of buoys to minimize disturbance to migratory birds.

c. Maintain seasonal closure of the White Bluffs boat ramp in order to provide a defacto sanctuary. Consider modifying the current closure (October 1 to June 1) to October 15 through April 15 for protection of wintering waterfowl and other aquatic birds allowing earlier access in the spring for the public.

d. To minimize disturbance to colonial nesting birds (e.g., California and ring-billed gulls) on islands, the following should be implemented: public education at boat ramps, boundary signing, law enforcement, and seasonal restrictions of public use.

e. Because aircraft also cause disturbance to nesting birds on the islands, maps for air traffic restrictions should be updated to minimize disturbance, especially during the breeding season.

f. Additional law enforcement from all jurisdictions (river patrol personnel with a boat) would be needed to protect important cultural resources on the islands.

4. Issue: White Bluffs sloughing

The White Bluffs were formed from river and lake sediments deposited by the ancestral Columbia River and its tributaries. These cliffs form the eastern bank of the Columbia River for nearly one-half the length of the Hanford Reach. They contain deposits of mammalian fossils including rhinoceros, camels, and mastodons. Subsurface movement of drainage return flows from the Columbia Basin Irrigation Project along an impermeable clay layer may have recently resulted in the bluffs sloughing into the river as well as on to Monument lands. Extensive mass wasting could result in the following negative impacts to biological resources: siltation of salmon spawning areas, spread of invasive species, and riparian habitat loss. Sloughing also could damage non-renewable archeological, geological, and paleontological resources.

a. Consider the forthcoming results of the situation assessment by the U.S. Institute for Environmental Conflict Resolution and Triangle Associates that will identify the causes of for sloughing of the White Bluffs. Based upon the findings and recommendations of these assessments and workshops, identify any data gaps, potential studies, and management alternatives needed to reduce subsurface flows from the problem areas. Monument staff should work with USGS-BRD, ACOE, BOR, DOE, adjacent private landowners, and, as appropriate, the National Monument Federal Planning Advisory Committee to resolve the sloughing problem with BOR and the Columbia Basin Irrigation Project.

5. Issue: Hanford Dune Field transfer

The DOE has expressed an interest in transferring management authority and eventual ownership of the Hanford Dune Field to FWS. The Dunes are located along the western shore of the Columbia River in the southeastern portion of the Monument. It is an area of actively migrating dunes rising 10 to 16 feet that creates sandy habitat ranging from 2 to several hundred acres in size. The Dunes have significant and unique biological resources (e.g., rare plants, invertebrates) associated with it. DOE is concerned about security of Central Hanford as well as human safety. Under any transfer scenario to the Service, DOE will require closure to the public as a result of human health and security issues. Closure to the public may also be warranted because the Dunes contain numerous archaeological resources that are vulnerable to theft.

a. Because the Dunes contain unique natural resources that are important to wildlife, transfer of this area to the Service should be evaluated with DOE. As there are potential contaminant hazards (groundwater) to wildlife and humans, request DOE to conduct contaminant sampling to ensure the Dunes are clean before transferring ownership to the Service.

b. Because the Dunes represent a unique ecosystem with rare plants and invertebrates, an inventory of this area should be conducted by a dune ecologist.

c. Additional law enforcement from all jurisdictions (river patrol personnel with a boat) would be needed to protect important cultural resources on the dunes.

C. Fire Management

Increases in the frequency and extent/severity of wildfires on the Monument over the last several decades has created conditions that favor invasive species (e.g., cheatgrass) and threatens biological diversity. In general, management emphasis should be focused upon limiting the number of ignitions, enhancing rapid response capabilities to limit the spread of fires, and creating new and enhancing existing buffers near likely sources of ignition (e.g., highways, other right-of-ways).

1. Issue: Fire suppression

Restoring natural fire intervals is the most essential tool to protect and restore native plant communities and associated wildlife on the Monument. Shrub-steppe restoration projects are extremely labor intensive, costly, and require decades to establish functional plant communities. The recommendations described below are necessary to protect these restoration projects.

a. Because the Monument only has 2 fire engines, there is a need for further evaluation to determine additional manpower and equipment necessary to bolster initial attack capabilities within the Service.

b. Coordinate with YTC, Yakama Indian Nation, DOE-Fire Department, and counties (Benton, Franklin, Adams, and Grant) to develop interagency fire agreements that would augment initial attack capabilities for fires on and off the Monument. In addition, develop agreements with private citizens and public entities with spray planes for use as single engine air tankers (SEATs) to provide additional support for initial air attacks. Maintain existing and develop new partnerships with DOE (Hanford FD) regarding the need for providing support for initial attack on Service lands to minimize the possibility of human health risks associated with the spread of wildfire to Central Hanford.

2. Issue: Fire breaks

Although participants in the wildlife and habitat management review concurred that the number and frequency of fires on the Monument should be reduced, there was a variety of approaches discussed to address the issue with no clear consensus regarding how and where to apply the following recommendations. Therefore, a fire summit involving federal, state, tribal, and county fire suppression entities as well as representatives from wildlife agencies and the environmental community (e.g., TNC) should be held to develop a program for implementation of these recommendations.

a. To prevent or minimize the wildfire impacts, reduce fuel loads consider the following: green strip with native and introduced species; grade/mow; disk followed by dust fixer, mow, and spray cheatgrass along highway right-of-ways; design and install fencing to reduce the build-up of tumbleweed; and prescribe fire for tumbleweeds along main highway right-of-ways. Also, consider herbicide applications to selectively remove (through timing, rate, specificity) cheatgrass from other areas.

b. Evaluate fuel breaks and grading/mowing and green stripping of existing roads to break habitat into blocks to provide fire breaks. These roads may also provide access for initial attacks and fighting fires.

c. To break fire cycles associated with infestations of invasive species (e.g., cheatgrass) and enhance/protect shrub-steppe restoration projects, conduct the following after a fire: plant shrubs in areas with grass/forb understory that are less likely to carry fires and protect patches that survive fires with buffers (especially large patches of sagebrush). Plant native grasses along with appropriate chemical treatment to assist with reestablishment of native grasses.

d. During the develop of the interagency fire management agreements (section V.E.1.b), identify priorities for resources that should be protected from fire.

e. Evaluate ways to minimize the possibility of human-caused fire ignitions on the Wahluke Unit. Develop a program to educate the public about the impact of fires and ways to avoid starting them.

3. Issue: Fire monitoring

In order to assess fire impacts as well as subsequent habitat restoration, it's essential to implement a monitoring program.

a. Identify funding sources for a Fire Ecologist to conduct long-term (5 to 10 years) monitoring of vegetation communities after fires. This position could conduct fire monitoring at multiple refuges.

D. Research

Because the Monument/SMNWR was a buffer surrounding the nuclear facilities on Central Hanford, it has been relatively free from human disturbance (e.g., agricultural activities) since the 1940s. The Monument/SMNWR contains one of the largest areas of undisturbed shrub-steppe habitat within the Columbia Basin. Because public access and use was limited, it offered unique opportunities for a variety of ecologically based research and monitoring. The ALE Unit has been designated a National Environmental Research Park, a Research Natural Area, and an Important Bird Area for Washington State.

1. Issue: Management and coordination

For decades, universities, DOE, and PNNL have conducted research on the ALE Unit. However, the Service has little information regarding the current status of research and monitoring projects on the Monument. There are projects that have been completed, but on the ground equipment and study area markers (research trash) still remain on the ALE Unit. This trash needs to be removed and the status of on-going projects provided to the Service. In addition, the Service needs to be involved in the prioritization and approval of new research considered for the ALE Unit.

a. Until management of ALE Unit is completely turned over to the Service, coordinate with DOE to ensure that research projects under their approval do not impact important wildlife and habitat resources. Continue to support research projects that are compatible with Monument purposes.

b. After the Service controls access to ALE Unit, conduct a problem analysis to identify data gaps and research needs. Establish a research review committee, which is composed of representatives of federal and state agencies, tribes, and environmental groups to prioritize research needs and review study proposals to ensure their site appropriateness, compatibility, and scientific validity.

c. Coordinate with DOE to identify on-going research or educational projects by PNNL and universities that should not be disturbed. For those studies that are completed, require PNNL or responsible researchers to remove the research trash. Any remaining research equipment and/or materials will be removed by Fish and Wildlife Service personnel.

d. Identify DOE research sites that could be used for long-term permanent monitoring and transfer data from DOE to USFWS.

E. Inventory and Monitoring

1. Issue: Inventory and monitoring priorities

Based upon the breadth of wildlife and habitat management activities on the Monument/SMNWR, there is a myriad of associated monitoring activities that could be conducted by the biological staff. However, current staffing and funding limitations preclude conducting all of these monitoring activities.

a. Conduct vegetation (terrestrial and riparian) mapping of the Monument using the protocol developed by YTC considering Service and DOI standards for GIS and vegetation classifications. These standards are currently being developed by the Service. Use the resulting GIS layers for analysis in order to identify key areas for management actions, protection, or enhancement.

b. Incorporate geo-referenced monitoring data (birds, mammals, fish, and invertebrates) into the GIS map coverages. Base future management decisions (e.g., sagebrush restoration, integrated pest management, fire suppression) upon spatial analyses of monitoring data considering vegetation, soils, and wildlife. These analyses will require an additional FTE for the Monument as a GIS specialist.

c. The Monument Proclamation should be used as the basis for establishing species priorities (e.g., T&E species and SOCs) and communities (e.g., sagebrush and grass/forb complex) to focus inventory and monitoring activities. Priorities should be further refined using bird conservation plans (PIF, shorebird, and waterfowl plans), T&E recovery plans, fishery management plans, and others. Based upon the identified priorities, prepare an inventory and monitoring plan utilizing standardized protocols that are reasonable and practical considering current and future biological staffing. The inventory and monitoring plan should be prepared as a step-down plan of the CCP.

d. Preliminary results of habitat monitoring conducted by TNC after Monument fires indicate community response data should be collected each of the first 3 years after a fire and every 3 to 5 years thereafter.

e. Conduct monitoring every year on the Monument to assess invasive species (e.g., cheatgrass and knapweed) problems. The IPM program will place a high priority on new infestations that will be easier and less costly to control/eradicate compared with established populations of invasives.

f. Consult with regional non-game biologists within Migratory Birds and Habitat Programs to develop a bird monitoring strategy for the Monument that prioritizes and balances the needs for long-term trend assessments at the larger landscape level along with the responses to specific shrub-steppe restoration efforts.

g. An integral component of the step-down inventory and monitoring plan is a relational database system to store and manage monitoring data. It should contain modules to store information regarding wildlife and habitat management actions (management prescriptions) along with the monitoring data as well as fish distribution data and relevant aquatic habitat conditions. The relational database approach allows the wildlife and habitat response to specific management actions to be evaluated to assess whether refuge objectives are being met. The database would also allow evaluation of fisheries responses to habitat conditions associated with operation of the Federal Columbia River Power System. Contact the Division of Refuge Operations Support, Branch of Refuge Biology for assistance with the design of the relational database for inventory and monitoring activities.

h. The Monument/SMNWR has been selected as a National Wildlife Refuge System Land Management Research and Demonstration site. This designation will provide funding for a research/management biologist position and will conduct/facilitate/coordinate management

oriented research on the shrub-steppe environment. A priority for this position will be the development and evaluation of shrub-steppe restoration techniques.

F. Wildlife Species Management

1. Issue: Sage Grouse Management

Sage grouse are limited in distribution within the state of Washington. A petition to list the sage grouse as a threatened species under the Endangered Species Act determined that the Washington population is a Distinct Population Segment (DPS). This population is warranted for listing as threatened, although currently precluded by higher priority listing packages. Only two populations of sage grouse remain in Washington state, they are currently isolated from each other and other populations in Idaho and Oregon. The statewide population of sage grouse is 900-1,000 birds with 600 birds on primarily private lands in Douglas and Grant counties and 300-400 on federal lands in Kittitas and Yakama counties. The state recovery plan for sage grouse identified large blocks of remaining shrub-steppe habitat as critical to recovery for the species in Washington. The Department of Defense's YTC (currently occupied) along with the Monument/SMNWR (unoccupied) and the Yakama Indian Reservation lands (unoccupied) are critical to the recovery of sage grouse in Washington. Because the birds require a large area for their home range, all identified zones within the recovery plan are essential to maintaining this DPS.

Recovery plans are currently being prepared for state and proposed federal listings of sage grouse. Reductions in sage grouse numbers and distribution are primarily the result of loss and degradation of shrub-steppe habitat from agricultural expansion, wildfires, overgrazing, removal of sagebrush, and invasive species.

a. To promote recovery of sage grouse, protect and restore large blocks of shrub-steppe on the Monument, particularly the ALE Unit.

b. Although the Monument can contribute to the protection and enhancement of sage grouse populations at the landscape level by addressing connectivity, its unrealistic to assume that the Service can restore enough shrub-steppe on refuge lands to maintain a distinct population on the Monument/SMNWR. Consequently, sage grouse should not be an indicator species to gauge the success of sagebrush restoration on the Monument. There are other sagebrush-obligate species (loggerhead shrike, sage sparrow, and Brewer's sparrow) that would be better candidates for indicator species to associate with the Monument's sagebrush restoration efforts (refer to the PIF Columbia Plateau Plan and the USFWS Birds of Conservation Concern, 2002 for lists of priority sagebrush-obligate bird species).

c. Although sage grouse will be discussed within the CCP, it should not be a focus/priority for sagebrush restoration efforts on the Monument. A CCP objective for sage grouse should consider the quantity and quality of habitat necessary for connectivity with sagebrush on adjacent lands such as the YTC and Yakama Indian Nation.

d. Consider adopting the following YTC management strategies for sage grouse on the Monument: public education about the species, use of seasonal closures to eliminate disturbance during the nesting season (leks through brood rearing), and use of a habitat suitability index (HSI) to guide management to identify the quantity and quality of habitat required for sage grouse. Develop a comprehensive vegetation map (based upon YTC protocols) that may be used to analyze habitat suitability for identification of key areas for management actions, protection, and enhancement.

2. Issue: Elk Management

As confirmed through archeological evidence, elk historically occurred in the Columbia Basin and they were identified as a priority species within the Proclamation. After being extirpated during the 1800s, Rocky Mountain elk were re-introduced into the state from Yellowstone National Park during 1913. Elk migrated from the Cascade Mountains to the ALE Unit during the early 1970s. The herd on the ALE Unit reached a peak population (~ 800) during 1999 followed by the relocation and harvest of 180 and 200 during 1999 and 2000, respectively. An additional 30 animals were removed and relocated during spring 2002. The current elk herd inhabiting the Monument (The Rattlesnake Hills herd) is approximately 450 during the winter months which is above the state's objective level of 350 animals.

Elk use the Monument and surrounding lands. During the summer months (calving season), fewer than 300 animals occupy the ALE unit. During winter months, the herd size increases as animals from surrounding lands migrate to the ALE as a wintering grounds. The abundant Sandberg's blue grass and cheat grass are the preferred forage for the wintering herd. Animals tend to be pushed onto the ALE unit during the fall hunting season because the area is free from human disturbance. It has been assumed that this herd is a "closed" population although this assumption has not been scientifically tested. Elk from other nearby areas may be seasonally using the Monument during winter. Agricultural damage on private lands adjacent to the ALE unit occasionally occurs during late summer. Because of this issue, the Service has partnered with WDFW, tribes, and DOE to reduce the herd. Since 1999, a program of trapping and removing elk along with liberal hunting seasons on neighboring lands has reduced the herd by nearly one-half.

a. Utilize population and habitat suitability models to identify a management objective for elk on the Monument.

b. Implement a phased approach to population management for elk that begins with net gunning and trapping with partners (e.g., WDFW, tribes) to relocate animals. If the herd size cannot be reduced through relocation combined with hunting adjacent to the Monument, consider implementing other management options such as a hunting program on the Monument. The goals of the hunting program on the Monument should be the following: force elk to remain on private and state-hunted lands rather than on the Monument or Central Hanford to maximize harvest, minimize impacts to refuge resources, and manage herd size through lower recruitment. The harvest program strategies to consider for the Monument

(in priority order) include tribal (Treaty of 1855), youth, primitive, physically challenged, and an advanced hunter program. As a last option, the herd may be reduced by culling.

G. Terrestrial T&E species

1. Issue: Protection and recovery

Because the Monument/SMNWR encompasses one of the largest remnants of shrub-steppe habitat within the Columbian Basin, it's inhabited by many sagebrush-obligate species and many unique species (e.g., Umtanum desert buckwheat). Many of these species are threatened or endangered (e.g., pygmy rabbit). Management issues regarding terrestrial T&E species focus upon the protection and restoration of shrub-steppe habitat on the Monument/SMNWR.

a. Reasons for declines in pygmy rabbit populations should be explored. Consult with endangered species biologists within the Service to determine if reasons for declines have been adequately identified. If causes of population declines can be addressed, then consult with WDFW biologists regarding sites on the North Slope with suitable shrub cover and deep soils for re-introduction of pygmy rabbits. Use GIS mapping to identify other potential sites with similar soils and shrub cover.

b. Apply management recommendations for Washington ground squirrel study conducted at Columbia NWR to promote recovery on the Monument. Use GIS mapping to identify potential sites with appropriate soils that support the forage base (likely big seeds based upon preliminary results of research conducted at Columbia NWR for the ground squirrel).

c. Because the entire population of Umtanum desert buckwheat (5,000 plants) is limited only to one ridge on McGee Riverlands Ranch, restrict public access to this area. The special-use permit that allows the inholder to herd sheep across the ranch should be modified to include specific conditions regarding route and timing for trailing sheep to protect buckwheat.

H. Contaminants

1. Issue: Identification of contaminant issues

The Monument/SMNWR faces a wide range of contaminant issues that can potentially affect wildlife and habitat management actions and public-use opportunities. The former production and storage of nuclear materials at Central Hanford represents a threat to natural resources on Monument/SMNWR. The DOE is developing and evaluating methods to clean-up and contain nuclear wastes on Central Hanford and prevent them from migrating into the buffer areas as well as the Columbia River. Military and DOE facilities associated with nuclear materials production also resulted in contaminant problems such as the use of organochlorine-based insecticides and lead-sheathed communications cables. In addition, the BOR Columbia Basin Irrigation Project runs wastewater through the Wahluke and Saddle Mountain units of the Monument. There are potential contaminant problems associated with irrigation return flows that provide water supplies for the WB-10 Ponds and Saddle Mountain Lake that are unrelated to DOE activities. In addition to the

recommendations below, information regarding the Services position on contaminant issues of the Monument/SMNWR are identified in a 16 May 2002 letter from Anne Badgley, Region 1 FWS Regional Director to Keith Klein DOE, Richland Operations Office.

a. There are sites scattered throughout the Monument that were identified as contaminated by the Service/DOE. As identified in the Services 16 May 2002 letter, additional post-remediation soil and biological samples should be collected to verify to verify the cleanup actions were adequate for these sites. Coordinate with DOE to consider placing these contaminated sites in a biomonitoring program to assess potential long-term threats to wildlife.

b. At McGee Ranch, several potential contaminant problems (dump sites associated with living quarters [DDT metabolites], underground storage tanks, lead-sheathed communication cable [buried 3 to 6 feet deep], and unexploded ordinance) may still exist. As for other contaminated sites on the Monument, the Monument/SMNWR staff should work with DOE on appropriate language to clarify that DOE will be responsible for remediation costs for any activities that took place prior to Service management before additional lands are transferred.

c. Assume Service management of potentially contaminated islands (e.g., D Island) after DOE clean-up of radioactive byproducts (e.g., Cobalt-60). Request ES-EC conduct a contaminant survey (Level III) to verify clean-up is adequate for protection of natural resources.

d. To address human health concerns, remove all non-essential buildings on Rattlesnake Mountain. Those buildings that remain should be remediated by DOE to address lead paint, asbestos, mercury, PCB, and other environmental compliance issues.

e. Request that the Service's Contaminant Division work with BOR to develop a refuge study to identify potential contaminants and associated threats to fish and wildlife habitat as well as public use from Columbia Basin Irrigation Project wastewater on the Wahluke and Saddle Mountain units.

I. Invasive Species Management

1. Issue: Control of invasive species through IPM

One of the primary threats to the diversity associated with native plant species and communities present on the Monument/SMNWR is non-native, invasive species (e.g., knapweed). A primary means by which invasive species have and will continue to infest the Monument/SMNWR is through habitat disturbances such as wildfire. Many invasive species also are state-designated noxious weeds such as yellow starthistle and salt cedar which necessitates their control/eradication.

a. Based upon the work conducted by TNC for the Service, prepare an IPM plan for invasive species that can be used as a step down for the CCP. The IPM plan for the Monument should include the following elements: problem definition and assessment (distribution and size of

infestation along with impacts), goals and objectives for control, biology of invasive species, program priorities, management actions, monitoring of control and extent of infestation, and resources needed to implement the plan (staff time, equipment, materials, and budget).

b. The Regional IPM Coordinator will assist with the development of the IPM plan and provide considerations for monitoring the extent of infestation and control efforts.

c. Because salt cedar, rush skeletonweed, and yellow starthistle are extremely invasive, the Monument staff should address the control of these species as soon as possible.

VII. Unit-Specific Issues and Recommendations

A. Wahluke Unit of the Monument

The Wahluke Unit of the Monument is located northeast of the Columbia River and SMNWR. The Columbia Basin Irrigation Project maintains several irrigation canals throughout the unit. This unit is open to wildlife-dependent recreation (hunting, fishing, environmental education, wildlife observation, interpretation, and photography).

1. Issue: Public use impacts on White Bluffs overlook

The White Bluffs overlook provides the public with an excellent scenic view of the Monument/SMNWR as well as Central Hanford. The overlook also provides the best opportunity for interpretation of the North Slope. However, goose hunters have dug pits and cut sagebrush every year to construct up to 30 blinds along 1.5 miles of the Bluffs for pass shooting Canada geese. The Bluffs also are the only known location in the world for species such as the White Bluffs bladderpod (species of special concern) that are highly vulnerable to disturbance.

a. Because the White Bluffs overlook is susceptible to disturbance (e.g., rare plants, microbiotic crust), identify and assess ways to modify public-use programs to minimize the impacts. The overlook provides an excellent opportunity to interpret important and unique resources of the Monument, including shrub-steppe, White Bluffs, rare plants and plant communities (e.g., microbiotic crust) as well the nuclear facilities associated with Central Hanford.

b. Because digging goose pit blinds along the White Bluffs causes disturbance to highly sensitive plant species (White Bluff bladderpod) and communities (sagebrush with microbiotic crust), this goose hunting should only be continued if it can be modified to protect sensitive resources on the bluffs. This form of hunting (pass shooting) should be evaluated to determine if it meets the Service standards for a quality hunting experience.

2. Issue: Trails for hikers and horseback riders

Unregulated recreational uses including hiking, hunting, and horseback riding currently occur on the Wahluke Unit. No trails or improved facilities (e.g., parking lots, water, toilets) currently are available. The level of dispersed activities by each user group on the landscape is not currently known nor is the individual impacts to cultural or natural resources (e.g. trampling of microbiotic crust). Additional inventories will be required to determine public use levels and associated impacts to the shrub-steppe.

a. Conduct an inventory of recreational uses on the unit in order to assess if facilities and trails are needed by user groups (e.g., horseback riders). If needed to reduce the impacts associated with recreational uses such as horseback riding, develop a trail system with minimal facilities. If trails are developed, they should avoid sensitive plant communities, while providing for opportunities for interpretation, education, and wildlife viewing. Develop partnerships with local horseback riding groups for the design, development, and maintenance of trails and facilities. Contact the YTC for information about their horse trails and riding facilities.

b. Although less environmental impact is associated with hikers as compared with horses, trails and associated facilities for hikers should be developed to encourage them to stay on established paths. In addition, interpretive opportunities associated with established trails should be provided to inform the public about the shrub-steppe ecosystem.

3. Issue: Wetland restoration

The wetland impoundment on the Wahluke Unit adjacent to the agricultural field on the Columbia River no longer functions as a result of a washed out levee. Because water levels cannot be maintained in this wetland, it has been infested by invasive species (e.g., knapweed). If restored, this wetland has the capability to provide habitat for migrating and wintering aquatic migratory birds. Specifically, the Proclamation identifies management for the following waterfowl species most of which would benefit from this restoration: mallards, green-winged teal, pintails, goldeneye, gadwall, and buffleheads. Riparian restoration would benefit a host of riparian-dependent landbirds as well as juvenile resident and anadromous fish in the Columbia Basin. In addition, restoration of the wetland area would be an effective way to control the invasive species that have infested this disturbed site.

a. The feasibility of wetland restoration to provide a diverse seasonal marsh that promotes the growth of moist-soil as well as emergent plants that provide food and cover for migrating and wintering waterfowl should be evaluated. Water control structures to restore the wetland could be designed that would permit the passage and/or avoid entrapment of anadromous and other native fish species. Evaluate levee/water control structures that would be needed to prevent wash out with high flows in the Columbia River. Restoration plans will require Section 7 consultation with NMFS.

b. Before initiating the restoration, request that the USFWS Engineering-Water Resources Branch work with BOR to obtain rights to use return flows (March to October) to manage the wetland. Develop partnerships with DU, Intermountain West JV, WDFW, BOR, Columbia Basin Irrigation Project, county weed board, and Pheasants Forever to gain support for the project. This wetland restoration will support the Proclamation throughout the following: benefit waterfowl, enhance riparian habitat, and control invasive species. This area is currently opened to pheasant and waterfowl hunting. The wetland restoration will provide quality waterfowl hunting opportunities as well as opportunities to view wetlands and wetland birds in proximity to the main road entering this unit. Pheasant hunting should be continued, however, the stocking program should be phased out as recommended in section V.C.3.

4. Issue: Phase out cropland management

The Proclamation establishing the Monument prohibits grazing as well as irrigated agriculture. A cooperative farmer currently is cultivating alfalfa and wheat on one 80-acre parcel within the Wahluke Unit.

a. Phase out cropping for alfalfa and wheat along with the cooperative farming program. In its place, conduct agricultural activities under a cooperative land management agreement (CLMA). Under this scenario, a farmer would grow a native seed with high market value. Because this area has been irrigated in the past, it was determined that irrigation of native grasses could be implemented within the guidelines of the Proclamation. The refuge's share would be native grass seed that could be used for shrub-steppe restoration throughout the refuge complex. Areas of the 80-acre field not used for native seed cultivation should be restored to native bunch grasses initially using the existing irrigation system.

5. Issue: WB 10 ponds

The WB-10 Ponds (800 to 1000 acres) are supplied by surface or subsurface drainage from the Columbia Basin Irrigation Project. The drainage and subsequent ponds have been potentially implicated in contributing to major mass wasting of the White Bluffs. Because the ponds utilize irrigation drainage, there are concerns about contaminants. These ponds have traditionally provided hunting and fishing opportunities to the public.

a. Consult with USGS and the BOR to determine if seeping from the WB10 ponds is contributing to sloughing of the White Bluffs. If required, the ponds should be drained to protect the Bluffs. If drainage is found not to contribute to sloughing, the ponds should be maintained because of the associated public use. The invasive species that border the ponds (e.g., Russian olive) should be removed and restored to a willow/riparian border along with shrub-steppe vegetation regardless of the outcome of the drainage issue.

b. Consult with BOR and USGS regarding water quality data collected in and adjacent to the WB-10 ponds to assess potential contaminant threats to biota as well as human health from

consumption of waterfowl and fish. If data are not adequate to evaluate potential contaminant threats, work with ES-Environmental Contaminants to develop a contaminant investigation proposal.

6. Issue: Modify the pheasant hunting program by enhancing opportunities for resident wild bird hunting

WDFW releases pen-raised pheasants on the Wahluke Unit for hunting. This activity is not consistent with Service policy regarding Biological Integrity, Diversity, and Environmental Health (601 FW3.14F). In addition, groups such as Pheasants Forever do not always support stocking of pen-raised pheasants for hunting. Alternatively, this group supports management that provides habitat for wild, self-sustaining populations of pheasants. Restoration of shrub-steppe and wetlands on the Wahluke Unit will also provide high quality habitat for wild pheasants. These habitat management actions will increase the carrying capacity of this area for pheasants which will result in higher quality hunting opportunities.

a. Include Pheasants Forever in discussions with WDFW regarding the proposed phase out for the release of pen-raised pheasants on the refuge.

b. Contact Pheasants Forever to foster a partnership for wetland restoration on the Wahluke Unit as well as restoration efforts throughout the refuge complex to restore shrub-steppe and provide more hunting opportunities for wild pheasants.

7. Issue: Dog trials

Dog trialing is a recreational activity that is directly related to a high-priority public use (hunting). On the Wahluke Unit, dog trials have been allowed by WDFW for the past 20 years involving up to 150 people, 300 dogs, and 40 horses for each event. Since the Service assumed management, these trials only have been allowed for 3 weekends during February/March and 5 weekends during the fall under conditions of a special-use permit. Special-Use Permit Policy for the National Wildlife Refuge System requires the following conditions be met: no ATVs to plant birds, only certified game farm chukars, no camping, and organizers required to carry liability insurance. Because camping is not permitted, there was no interest in conducting dog trials during the past year.

a. Because the area traditionally used for dog trials has been highly disturbed and covered with invasive species, little further environmental impact would result from continuation of this public use. The following factors should be considered with respect to the compatibility of dog trials: spread of invasive species (e.g., camelthorn, perennial pepperweed), impacts on landbirds (long-billed curlews, other ground nesters), potential for restoration, exposure of public to contaminants, number of events per year, and priorities for restoration. In addition, the need and availability of alternative sites off-refuge for this activity should be determined. If there is a need for this activity on the refuge and these factors can be reasonably resolved, then this use should be permitted to continue. Develop partnerships with local dog training clubs for the design, development, and maintenance of trial areas and facilities.

B. Saddle Mountain Unit

1. Issue: Public access to Saddle Mountain Lake

The Saddle Mountain Unit of the Monument has been managed by the Service since 1971 under a 30-day revocable use permit with DOE. The Columbia Basin Irrigation Project maintains an irrigation return canal that created and supplies water to Saddle Mountain Lake. This unit has been closed to the public since the 1940s. Currently, access is only available for approved research activities under a special-use permit and operation/maintenance of the irrigation return canal.

a. Closure of Saddle Mountain Lake should be maintained at this time. Before this area can be opened to the public, the following issues should be considered: difficulty in limiting access to this specific, remote area of SMNWR that is closed to the public; DOE 10-year closure associated with clean-up of nuclear contaminants that affect human health; potential concern for human health associated with fish consumption; safe ingress and egress; and sensitive resources (e.g., spring closures for nesting aquatic birds such as grebes). Public use of this area should be considered in relationship to the goals and objectives for the entire unit during the CCP process. Opening this area may require and EA or CD for each proposed recreational activity.

b. Before this lake could be opened to public use (fishing, hunting, and other priority public uses), conduct an inventory to identify sensitive areas and seasons of use for the lake and surrounding habitat for trust resources. Assess contaminant levels in water, fish, and sediments. Sample fish populations to determine if a fishable population exists.

c. Develop a program to control invasive species (Russian olive, saltcedar, and phragmites) within and around the perimeter of the lake. Develop a program to control upland weeds (diffuse knapweed, Russian knapweed, rush skeleton weed, and yellow-star thistle) on other sites.

d. Because carp are limiting the value of the lake to waterfowl, consider ways to reduce and control the carp population and methods to prevent carp from entering the intake that supplies irrigation return flows.

Appendix

Wildlife and Habitat Management Review Team
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Saddle Mountain National Wildlife Refuge

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