



Fish Springs National Wildlife Refuge
Draft Comprehensive Conservation Plan
and
Environmental Assessment

Prepared by U.S. Fish & Wildlife Service

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Summary

Fish Springs National Wildlife Refuge (NWR), located in western Utah in Juab County (see Figure 1 on page 2 and Figure 2 on page 3), is one of the most isolated refuges in the lower 48 states. The nearest neighbors reside in Callao, Utah, a ranching community of about 45 people, 24 miles west of the Refuge. The nearest communities with services are Dugway Proving Ground, Utah, 63 miles to the northeast and Delta, Utah, 78 miles to the southeast. The Refuge consists of 17,992 acres of fee-title land surrounded on the east, west, and south by Bureau of Land Management (BLM) holdings and on the north by the U.S. Army's Dugway Proving Ground. Springs flowing from the eastern base of the Fish Springs Range feed a 10,000-acre saline marsh divided into nine impoundments (see Figure 3 on page 4). The remaining portion comprises 6,000 acres of mud and alkali flat and 2,000 acres of semidesert upland.

The Refuge was established because of its historical attraction of waterfowl. Since Refuge establishment, more than 278 species of birds have been seen at Fish Springs NWR, 61 of which nest on the Refuge. The Refuge provides the only important wetland habitat for a 70-mile radius. Consequently, the Refuge attracts hundreds of wetland-dependent species during migration. During fall migrations, 30,000 ducks have been recorded. More than 40 species spend the winter at the Refuge. The Refuge also provides habitat for threatened and endangered species including bald eagle and least chub.

Fish Springs NWR has a rich and diverse human history. It has likely been a focal

point of human existence as long as 11,000 years. Evidence of pre-historical occupation is found over nearly all of the Refuge.

Euro-American history of the Refuge begins in 1827 with the first documented visit to the marsh by famed mountain man and pioneering explorer Jedediah Smith. In 1860, Fish Springs became a stop on the Pony Express Route and Overland Stage routes. In 1861, the Transcontinental Telegraph line passed through Fish Springs. In 1913, the Lincoln Highway, the nation's first transcontinental automobile road, passed through Fish Springs.

This Draft Comprehensive Conservation Plan (CCP) for the Fish Springs NWR discusses the planning process, Fish Springs NWR characteristics, and the U.S. Fish & Wildlife Service's (Service) proposed management for the Fish Springs NWR for the next 15 years. An Environmental Assessment describing the anticipated effects of the Service's proposed management and other alternatives is incorporated into this document.

The purpose of the proposed CCP is to describe the goals established for Fish Springs NWR, and the objectives and strategies needed to meet the goals. The goals for Fish Springs NWR include five focus areas: habitat, ecological integrity, visitor services, cultural resources, and partnerships.

The purpose of developing the CCP is to provide the Refuge Manager with a 15-year management plan for the conservation of wildlife, fish, and plant resources and their

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related habitats, while providing opportunities for compatible wildlife-dependent recreational uses.

The Environmental Assessment conducted for this CCP evaluates three alternatives:

- Alternative A – No Action
- Alternative B – Refuge Restoration
- Alternative C – Management for Wildlife Diversity (Proposed Action)

Table S-1 provides a summary comparison of alternatives.

In the No Action alternative, the Service would not implement any new management, restoration, and visitor service programs at the Refuge. The current management as described in the Marsh Management Plan (1991), the Wildland Fire Management Plan (2002), and the Integrated Pest Management Plan (2003) would continue.

Restoration of Refuge habitats to pre-Refuge conditions would be the focus of Alternative B. Marsh restoration would consist of removing all dikes and water control structures, and allowing restoration of pre-Refuge hydrology and landforms. All

interior Refuge roads would be removed and native vegetation restored. Habitat management would strive to eliminate invasive weed species and restore pre-Refuge vegetation communities in the marshes and high desert shrubland community.

In Alternative C, Refuge management would focus on providing habitat for the maximum diversity of wildlife, including migratory birds, and native mammal, mollusk, invertebrate, and amphibian communities. Under this alternative, habitat needs for species other than migratory birds that had not been addressed adequately in past management efforts would be fully integrated into management efforts. Ensuring that the full complements of fauna and flora historically represented on the Refuge are recognized and that full efforts to understand and meet the habitat requirements for these species would be made a priority.

The environmental consequences of each alternative were evaluated and compared. A summary comparison of environmental consequences is presented in Table S-2.

Table S-1. Summary comparison of alternatives.

	Alternative A (No Action)	Alternative B (Restoration)	Alternative C (Proposed Action)
Marsh Management	<ul style="list-style-type: none"> • Continue current management of marsh for waterfowl, shorebirds, and water birds - mosaic of deep water, shallow water, and mud flats • Continue seasonal drawdowns on 5-year cycle • Prescribed burning in different units 	<ul style="list-style-type: none"> • Remove all dikes and water control structures to bring Refuge lands back, as much as possible, to its original natural hydrology • Water would flow from springs unimpeded 	<ul style="list-style-type: none"> • Continue current management of marsh for waterfowl, shorebirds, and water birds - mosaic of deep water, shallow water, and mud flats • Restore Harrison Unit to historical hydrological, physical, and biological conditions • Enhance areas of potential colonial wading bird habitat • Seasonal drawdowns or water increases in some units • Prescribed burning in different units • Consider subdividing some impoundments for more efficient use of limited water inflows • Conduct bathymetric survey of all marsh impoundments • Identify and monitor species indicative of habitat
Uplands High Desert Shrubland	<ul style="list-style-type: none"> • No active management – passive management and wildfire suppression 	<ul style="list-style-type: none"> • Determine historical native floristic complement of high desert shrubland community • Research appropriate restoration methods • Restore to appropriate floral complement 	<ul style="list-style-type: none"> • Determine historical native floristic complement of high desert shrubland community • Research appropriate restoration methods • Restore to appropriate floral complement

Summary

	Alternative A (No Action)	Alternative B (Restoration)	Alternative C (Proposed Action)
Ecological Integrity	<ul style="list-style-type: none"> • Assess population levels and trends of birds using the Refuge - continue bimonthly bird counts/index, spring mist-netting, and shorebird surveys. • Continue work to minimize impacts of military overflights • Continue to manage invasive plant species • Continue to monitor and protect sensitive species habitat 	<ul style="list-style-type: none"> • Institute complete and comprehensive biological monitoring plan - monitoring of waterfowl, shorebirds, passerines and other birds; predators; small mammals, reptiles and amphibians, and invertebrates • Develop complete GIS-based vegetation mapping for all Refuge lands • Manage lands for native plant and animal species, taking steps to limit impacts of nonnatives • Continue work to minimize impacts of military overflights 	<ul style="list-style-type: none"> • Institute complete and comprehensive biological monitoring plan - monitoring of waterfowl, shorebirds, passerines and other birds; predators; small mammals, reptiles and amphibians, and invertebrates • Develop complete GIS-based vegetation mapping for all Refuge lands • Manage lands for native plant and animal species, taking steps to limit impacts of nonnatives • Continue work to minimize impacts of military overflights • Implement habitat initiatives on behalf of threatened and endangered species, specifically snowy plover, bald eagle, and least chub • Establish a baseline for hydrological, chemical, physical, and biological conditions of Harrison Unit in three phases • Restore unimpeded flows to Harrison Unit • Identify and monitor indicator species to evaluate biota response to habitat change • Monitor hydrological, physical and biological conditions of Harrison Unit • Establish an adaptive management approach to restored flows in the Harrison Unit

	Alternative A (No Action)	Alternative B (Restoration)	Alternative C (Proposed Action)
Roads	<ul style="list-style-type: none"> No changes - all roads outside sanctuary areas open to public, with some limited seasonal closures 	<ul style="list-style-type: none"> All dike roads would be removed 	<ul style="list-style-type: none"> Dike roads in Harrison Unit would be removed
Sanctuary Areas-Closed to Public	<ul style="list-style-type: none"> No changes - 10,746 acres or 60% of Refuge 	<ul style="list-style-type: none"> Undetermined until marsh restoration completed 	<ul style="list-style-type: none"> Undetermined until marsh restoration in Harrison unit is complete
Hunting	<ul style="list-style-type: none"> Waterfowl hunting (no swans or snipe) Three universally accessible blinds 	<ul style="list-style-type: none"> Waterfowl hunting (no swans or snipe) Institute a goose hunt One universally accessible blind 	<ul style="list-style-type: none"> Waterfowl hunting (no swans or snipe) Institute a goose hunt Three universally accessible blinds
Fishing	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None
Wildlife Observation, Photography and Interpretation	<ul style="list-style-type: none"> Thomas Ranch Watchable Wildlife Area Limited boating Three universally accessible blinds Visitor contact kiosk International Migratory Bird Day event Annual public visitor event Auto-tour route 	<ul style="list-style-type: none"> Thomas Ranch Watchable Wildlife Area Expanded Boating One universally accessible blind Visitor contact kiosk International Migratory Bird Day event Annual public visitor event Construct universally accessible interpretive boardwalk Construct viewing platform 	<ul style="list-style-type: none"> Thomas Ranch Watchable Wildlife Area Limited boating Three universally accessible blinds Visitor contact kiosk International Migratory Bird Day event Annual public visitor event Auto-tour route Construct universally accessible interpretive boardwalk Construct two viewing platforms
Environmental Education	<ul style="list-style-type: none"> Host Boy and Girl Scouts as requested Occasional tours for other groups as requested Host visits by school groups as requested 	<ul style="list-style-type: none"> Host Boy and Girl Scouts as requested Occasional tours for other groups as requested Host one to two visits from school groups annually Conduct two to four in-school programs annually 	<ul style="list-style-type: none"> Host Boy and Girl Scouts as requested Occasional tours for other groups as requested Host one to two visits from school groups annually Conduct two to four in-school programs annually

Summary

	Alternative A (No Action)	Alternative B (Restoration)	Alternative C (Proposed Action)
Other	<ul style="list-style-type: none"> Maintain current outreach and volunteer program 	<ul style="list-style-type: none"> Expand outreach and volunteer programs 	<ul style="list-style-type: none"> Expand outreach and volunteer programs
Cultural Resources	<ul style="list-style-type: none"> Continue current level of cultural resource protection Host University of Utah archaeological summer field school as opportunities arise Cultural resources display and Lincoln Highway marker and sign in Headquarters building 	<ul style="list-style-type: none"> Increase protection of known resources Host University of Utah archaeological summer field school as opportunities arise Cultural resources display and Lincoln Highway marker and sign in Headquarters building Work with partners to excavate two archaeologically important caves on Refuge Perform a complete cultural resources inventory Possibly nominate entire Refuge as a National Archeological District Produce interpretive brochure about prehistoric and historic cultural resources of the Refuge Construct turnout along county road with panel interpreting use of area as a transportation area through time Interpretive panel at Watchable Wildlife Area focusing on uses of area from prehistoric occupation up to early days of Refuge 	<ul style="list-style-type: none"> Increase protection of known resources Host University of Utah archaeological summer field school as opportunities arise Cultural resources display and Lincoln Highway marker and sign in Headquarters building Work with partners to excavate two archaeologically important caves on Refuge Perform a complete cultural resources inventory Possibly nominate entire Refuge as a National Archeological District Produce interpretive brochure about prehistoric and historic cultural resources of the Refuge Construct turnout along county road with panel interpreting use of area as a transportation area through time Interpretive panel at Watchable Wildlife Area focusing on uses of area from prehistoric occupation up to early days of Refuge

	Alternative A (No Action)	Alternative B (Restoration)	Alternative C (Proposed Action)
Partnerships	<ul style="list-style-type: none"> • Continue partnerships with University of Utah Museum of Natural History, Brigham Young University, and Southern Utah University for archaeological, geomorphological, and biological research • Continue Partners for Fish and Wildlife with Utah DWR for least chub re-introduction and other projects 	<ul style="list-style-type: none"> • Continue partnerships with University of Utah Museum of Natural History, Brigham Young University, and Southern Utah University for archaeological, geomorphological, and biological research • Continue Partners for Fish and Wildlife with Utah DWR for various projects • Assist in formation of Eastern Bonneville Basin partnership • Renew participation in Partners in Flight, Intermountain West Joint Venture All Birds Conservation, and Intermountain West Regional Shorebird Plan team 	<ul style="list-style-type: none"> • Continue partnerships with University of Utah Museum of Natural History, Brigham Young University, and Southern Utah University for archaeological, geomorphological, and biological research • Continue Partners for Fish and Wildlife with Utah DWR for least chub re-introduction and other projects • Assist in formation of Eastern Bonneville Basin partnership • Renew participation in Partners in Flight, Intermountain West Joint Venture All Birds Conservation, and Intermountain West Regional Shorebird Plan team

Table S-2. Summary of environmental consequences.

Goal Area	Alternative A (Current Management)	Alternative B	Alternative C (Proposed Action)
Marsh	<ul style="list-style-type: none"> • Slow erosion of waterfowl wintering, migration, and nesting habitat • Decreased aquatic invertebrate productivity • Decreased quality of foraging in some units • Shorebird and colonial waterbird nesting habitats maintained at existing levels • Substantial degradation of shorebird migration habitat • Degradation of marsh upland habitat • Less saltgrass and Baltic rush 	<ul style="list-style-type: none"> • Open water and islands replaced by braided channels • Drastic reductions in wintering, migration, and nesting habitat for waterfowl and shorebirds • Reduction in use of Refuge by waterfowl and shorebirds to fraction of present • Less foraging habitat for wading birds • Increase in habitat preferred by wetland-nesting passerines • Indeterminate effect on habitat needs of piscivorous birds 	<ul style="list-style-type: none"> • Improved wintering, migration, and nesting habitat for waterfowl • Increased production of aquatic invertebrates • Increased brood survival rates for waterfowl and shorebirds • Increased spring migration habitat for shorebirds • Nesting habitat for up to 150 more pairs of colonial water birds • Enhanced potential habitat for colonial waterbirds • Restoration of historical marsh hydrology and wildlife communities in Harrison Unite • Increased biodiversity of native flora and fauna and a diverse mosaic of habitat • Decreased flora and fauna dependent on open water habitat
High Desert Shrubland	<ul style="list-style-type: none"> • Unpredictable restoration of native grasses • Native plants slowly increase in abundance • Very limited expansion of cheatgrass 	<ul style="list-style-type: none"> • Historical native plant composition restored • Increase in native grasses • Improvement in relative abundance of native to nonnative plants • Improved quality of habitat for high desert shrubland dependent bird, mammal, and invertebrate species 	<ul style="list-style-type: none"> • Same as Alternative B

Goal Area	Alternative A (Current Management)	Alternative B	Alternative C (Proposed Action)
Ecological Integrity	<ul style="list-style-type: none"> • Spread of <i>Phragmites australis</i> • Decline in native snail diversity • Possible decline in least chub population • No increases in snowy plover nesting success • No bald eagle roosting sites free from disturbance 	<ul style="list-style-type: none"> • Greatly improved natural ecosystem integrity • Reductions in <i>Phragmites australis</i>, whitetop, and tamarisk • Preservation of native spring snail species richness • Drastic decline in least chub population • Large increase in mosquito fish population • Possible degraded foraging and nesting habitat for snowy plover • No bald eagle roosting sites free from disturbance • Smaller prey base for bald eagles and other birds of prey, coyotes, and red fox • Increase in native marsh plants • Increased wetland-nesting passerine populations 	<ul style="list-style-type: none"> • Reduction in <i>Phragmites australis</i>, whitetop, and tamarisk • Preservation of native spring snail species richness • Increase in least chub population • Increased snowy plover nesting success • Disturbance-free bald eagle roosting sites • Slight increases in prey base for bald eagles and other birds of prey, coyotes, and red fox • Increase in native marsh plants • Improved habitat for wetland-nesting passerines, waterfowl, shorebirds, and water birds • Increased protection for breeding waterbirds
Visitor Services	<ul style="list-style-type: none"> • Currently ranges between 2,000-3,100 annual visitations • Increased hunting opportunities • 50 students/year reached through environmental education programs 	<ul style="list-style-type: none"> • Decrease to 1,500 annual visitations • Increased hunting opportunities • Vehicle access to Refuge limited, due to elimination of roads • Increased boat and foot access opportunities • Loss of open water for boating • 200 students/year reached through environmental education programs 	<ul style="list-style-type: none"> • Increase to 5,000 annual visitations • Increased hunting opportunities • Increased opportunities for wildlife observation and photography • 200 students/year reached through environmental education programs • Opportunities for boating closed until August 15
Cultural Resources	<ul style="list-style-type: none"> • Continued loss of cultural artifacts due to theft • Better protection of important sites • No significant disturbance to wildlife resources 	<ul style="list-style-type: none"> • Decreased loss of cultural artifacts due to theft • Improved protection of all sites • Increased opportunities for learning about cultural significance of Fish Springs area • No significant disturbance to wildlife resources 	<ul style="list-style-type: none"> • Same as Alternative B

Summary

Goal Area	Alternative A (Current Management)	Alternative B	Alternative C (Proposed Action)
Partnerships	<ul style="list-style-type: none"> • More informed management of Refuge biological and cultural resources • Higher likelihood of achieving Refuge objectives 	<ul style="list-style-type: none"> • More informed management of Refuge biological and cultural resources • Higher likelihood of achieving Refuge objectives • Greater regional contribution by Refuge 	<ul style="list-style-type: none"> • Same as Alternative B

