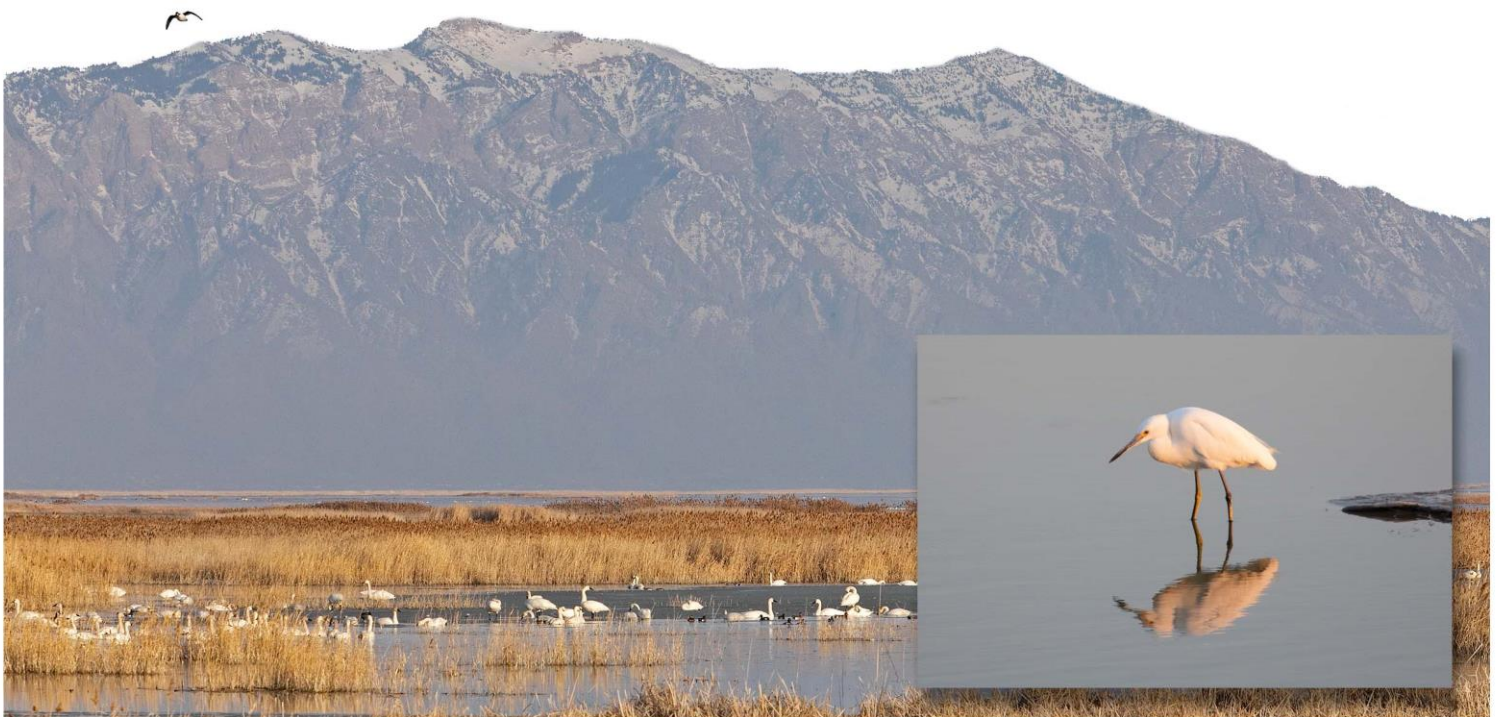


# Visitor Interpretive Experience Plan



## Bear River Migratory Bird Refuge

**BUCY Associates**  
2921 NW Hayes Ave.  
Corvallis, OR 97330  
541-758-3502

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# **Visitor Interpretive Experience Plan**

**For**

# **Bear River Migratory Bird Refuge**

**August 31, 2022**



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# Executive Summary

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*\*Note on capitalization: Aside from words that should be capitalized, specific areas (Visitor Center) have been capitalized as have the recommended strategies to develop (Area Orientation Panel, Message Overview Panels, etc.).*

The Visitor Interpretive Experience Plan for Bear River Migratory Bird Refuge identifies the interpretive opportunities, supporting infrastructure and other actions to be taken to upgrade visitor interpretive experiences that highlight the Refuge and help make progress towards the overall Management Goals. The following is a brief overview of the goals, messages, priority audiences, key factors, and primary recommendations in this plan.

## Goals

The direction for the plan – the Visitor Interpretive Experience Goals – were established from the Vision and Management Goals for the Refuge.

### Vision

The following vision was submitted by the Refuge based on the 2021 Habitat Management Plan (HMP).

*The Refuge will play an important role in a healthy Bear River delta and the Great Salt Lake ecosystem, containing a broad diversity of plants and animals. The Refuge will emphasize habitat management to provide habitats necessary for the resources needed to fulfill life cycle events (migration, staging, feeding, and breeding) of migratory bird species, and native resident wildlife, using the Refuge. The Refuge will serve as an important migratory link for more than 210 species of birds as well as the 70 species that are known to nest on the Refuge. The Refuge will provide wildlife-dependent recreational opportunities for over 140,000 visitors annually. Opportunities for compatible hunting, fishing, environmental education, interpretation, and photography will be provided.*

### Management Goals (from the 2021 Habitat Management Plan)

1. Restore and manage Bear River deltaic wetland habitats and River Corridor units to emulate historic natural hydrology, where possible, to provide migration and breeding habitat for a diversity of waterfowl, wading birds and shorebirds.
2. Restore and manage wet meadow and upland habitats in the Wasatch Front to produce native grasses, sedges, rushes, and forbs, where possible, to provide foraging and breeding habitat for a diversity of waterfowl, wading birds, and shorebirds.
3. Prevent further physical alterations to maintain the existing hydrologic and topographic integrity of the Refuge.
4. Maintain and expand partnerships that contribute to the conservation and enhancement of Refuge habitats, the Bear River watershed, and the Great Salt Lake ecosystem.

## Visitor Interpretive Experience Goals

Visitor Interpretive Experience Goals were derived from the Management Goals of the Refuge by asking 'How is an interpretive program going to help achieve these goals.' The following were the answers to that question. Objectives can be found in the complete Goal Hierarchy section.

**Interpretive Program Goal 1:** Increased level of stewardship on the part of visitors (*become better stewards of natural and cultural resources*), including recreating responsibly.

**Interpretive Program Goal 2:** Increased participation in appropriate nature-based activities.

**Interpretive Program Goal 3:** Increased support for the Refuge and the U.S. Fish and Wildlife Service (this includes increased support for management decisions affecting the Refuge).

**Interpretive Program Goal 4:** All visitors feel welcome to the Refuge and safe when exploring the recreational opportunities at the Refuge and in nature in general.

## Priority Audiences

Priority audiences are ones that potentially have the greatest impact on achieving Management Goals. The primary priority audiences are the following:

- West Salt Lake City
- East Central Ogden
- Brigham City

Residents of other parts of Salt Lake City and Ogden (designated priority community), and residents of Cache Valley, are also important audiences.

Within each of those groups are the more typical audience segments – families, elderly, those with physical limitations, groups of friends (of any age), residents with a Latino cultural heritage, and nature-based recreation-oriented visitors.

## Key Factors

The following are the most significant factors (parameters) that affected decisions regarding the plan:

- The Refuge has limited number of staff for providing visitor services, and a limited number of volunteers, consequently, non-personal opportunities must provide a basic interpretive experience.
- The Refuge has a limited budget for maintenance and implementation.
- The designated priority community (Ogden) and nearby population centers have a significant number of visitor opportunities associated with natural resources that are closer to where they live.
- The Refuge has a Visitor Center and associated trails and an outdoor classroom and play area.
- The Visitor Center is located 12 miles from the Auto Tour, which is the best place to see the wetlands and wildlife.



- Basic infrastructure (parking area, restrooms, observation tower, picnic tables) exists at the site of the former Visitor Center, adjacent to the entry to the Auto Tour.
- Most of the Refuge is not open to visitors.
- New signage was recently developed for the Auto Tour and will be replaced in September 2022.
- The Refuge did not have a CCP.
- The Visitor Center for the Refuge is located just off Interstate 15/84, the major north-south travel corridor in northern Utah.

## Messaging

Motivating people to act regarding resources requires that they value them as a key part of what they consider quality of life; that they are aware that the resource (and therefore their quality of life) is threatened; and that an ongoing effort to conserve the resource exists and includes people similar to the visitor. If those conditions are met, a Call to Action is much more likely to be successful. The following messages were selected with that in mind. The messaging also takes guidance from [The Language of Conservation](#) and was created with input from Refuge staff. The Language of Conservation, commissioned by the Nature Conservancy, provides recommendations for communicating effectively to build support for conservation.

The following are the messages to be communicated in the Interpretive Program. Sub-messages and supporting stories for each message, which can be found in the section on messages, provide the fodder for the interpretive network.

**Interpretive Message 1:** Nature is important to your quality of life.

**Interpretive Message 2:** Bear River Migratory Bird Refuge provides many benefits to you.

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Interpretive Message 4:** Everything in an ecosystem is linked and everything plays a part. Impact on one component has a ripple effect through the rest of the ecosystem.

**Interpretive Message 5:** Many people and organizations, including the U.S. Fish and Wildlife Service, are working to conserve and manage habitat to protect wildlife for people today and for future generations.

**Interpretive Message 6:** Water conservation in the Great Salt Lake Ecosystem is essential and Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

**Interpretive Message 7:** Managing the Bear River Migratory Bird Refuge for wildlife habitat while supporting public use and maintaining flow of the Bear River to feed the Great Salt Lake ecosystem is a complex and everchanging challenge.

## Key Recommendations

Recommendations are organized by stage of the visitor experience. The most significant recommendations come in the Arrival and Primary stages of the Visitor Experience. Key recommendations include the following:

**Choosing to Engage – Recommendations**

- Maintain current general brochure.
- Maintain presence on social media, and use of traditional media when appropriate.
- Develop a Portable Exhibit to be loaned out to partner organizations and for use at events.

**Pre-Trip Experience – Recommendations**

- Develop a Video Tour of Bear River Migratory Bird Refuge to motivate visitors to plan to spend some time at the Refuge and provide an opportunity for ‘armchair travelers’ to enjoy the Refuge and form an emotional attachment.
- Redevelop the Refuge Website to the extent possible to make it more welcoming to and user-friendly for potential visitors.

**Travel Experience - Recommendations**

- Work with the Department of Transportation to develop a new directional sign at 2600 West so visitors coming from Golden Spike National Historic Site or Corrinne, UT are directed to the Visitor Center and Auto Tour.

**Arrival Experience - Recommendations**

- Upgrade the arrival area to the Visitor Center, including removing barbed wire as fencing, eliminating bird silhouettes on the fence, improve the maintenance of the area.
- Change the wording on the building so it says ‘Bear River Migratory Bird Refuge Visitor Center with the U.S. Fish and Wildlife Service logo.
- Put the word ‘Welcome’ in multiple languages along the visitor’s entry pathway.
- Install directional signage in the lobby of the Visitor Center.

**Primary Experience: Visitor Center and Area Behind Visitor Center - Recommendations**

- Put in a connecting boardwalk from the trailhead in the parking area to the back of the Visitor Center.
- Develop new exhibits for the exhibit hall.
- Update the signage on the interpretive trail when it is time to replace the signs.

**Primary Experience: Other Parts of the Refuge**

- Develop an Audio Auto Tour Podcast.
- Develop a Discovery Guide for children as part of the Jr. Ranger materials.
- Remove the existing kiosk at the Yates parking area and install new interpretive panels.
- Develop an Outdoor Activity and Program Center where the former Visitor Center was located and begin putting on programs and staging events there.
- Build a kiosk and develop Message Overview Panels for the Auto Tour.

# Goal Hierarchy

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## Introduction

The VIEP takes its direction (Interpretive Goals) from Management Goals, which reflect how the U.S. Fish and Wildlife Service intends to achieve the Vision/Mission for the Refuge. The Objectives/Indicators reflect impacts on the behavior, knowledge, and attitude of the priority audiences, which, if achieved, result in progress toward the Interpretive Goals. The recommended interpretive opportunities and associated actions in the Action Plan that are the tools for achieving the desired impacts on priority audiences. All those elements have been captured in the hierarchical structure depicted below.

**Level 1: U.S. Fish and Wildlife Service Mission and National Wildlife Refuge System (NWRS) Goals**



**Level 2: Bear River Migratory Bird Refuge Vision**



**Level 3: Bear River Migratory Bird Refuge Management Goals**



**Level 4: Interpretive Program Goals and Objectives/Indicators**

Details on Level 1, 2 and 3 can be found in the Background Information for the VIEP, which contains all the Background Information used to create the plan.

## Level 4: Interpretive Program Goals, Objectives, and Indicators

Interpretive Program Goals, Objectives, and Indicators focus on the desired impacts and outcomes from the interpretive opportunities in which a visitor engages. Although measurable objectives are preferred, eliminating objectives because of the difficulty in measuring them results in an incomplete picture of what content should be included. If measurement is not possible, potential measurable indicators are included. They do not, by themselves, indicate success, but they do provide guidance for what to include in the interpretive opportunities.

**Interpretive Program Goal 1:** Increased level of stewardship on the part of visitors (*become better stewards of natural and cultural resources*), including recreating responsibly.

**Note:** *An increase in the level of stewardship regarding natural resources is an indicator of an increase in how much people value nature.*

**Objective 1-1:** Visitors will incorporate one new conservation strategy at their home (ex. bird feeder, bird bath, bee house, native flowers, pollinator garden, using native plants in landscaping, etc.).

### Potential Indicators

- Number of people participating in programs/classes (on or off-site), offered by the Refuge or collaborators/partners, focusing on conservation practices for the home (including water conservation) will increase by 10% in the year after implementing an interpretive strategy focused on this topic.
- Sales of items facilitating conservation of natural resources at someone's home (such as pollinator garden kits, bird feeders, seeds collected from native plants, native plants, wildflower seed packets, pollinator houses, reusable water bottles, publications on conservation strategies for the home, etc.) will increase by 10% in the year after implementing an interpretive strategy focused on this topic. (The actual indicator will depend on what is sold in the bookstore.)
- Number of Facebook posts depicting new conservation measures a visitor has taken at home (such as putting up bird feeding stations, planting a pollinator garden, using native plants in landscaping, etc.) will increase by 10% in the year after implementing an interpretive strategy focused on this topic.

**Note:** *Sales items were all lumped into one category but increased sales of any one of the items depends on implementation of new interpretive opportunities, environmental education opportunities, or classes, and obtaining a measurement of impact depends on establishing baseline data.*

**Objective 1-2:** People will recreate responsibly and to the extent possible, will leave no trace of their presence when spending time in nature.

### Potential Indicators

- Amount of garbage collected from areas frequented by visitors will decrease by 10% (in proportion to the number of visitors) in the year after implementing an interpretive strategy focused on this topic.

- Number of shotgun shells found in the field will decrease by 10% (in proportion to the number of hunters using the Refuge) in the year after implementing an interpretive strategy focused on this topic.
- Amount of trash collected specifically from popular fishing sites will decrease by 10% (in proportion to the number of anglers using the Refuge) in the year after implementing an interpretive strategy focused on this topic.

**Objective 1-3: The percentage of visitors who recreate appropriately on the Refuge will increase significantly.**

**Potential Indicators**

- Number of citations / warnings for inappropriate use of the Refuge will decrease by 50% in the year after implementing an interpretive strategy focused on this topic.
- Number of safety related events during hunting season will decrease by 25% in the year after implementing an interpretive strategy focused on this topic.
- Number of citations / warnings to anglers for violations of fishing regulations will decrease by 25% in the year after implementing an interpretive strategy focused on this topic.
- Observations of violations of 'Rules of the Road' on the Auto Tour will decrease by 25% in the year after implementing an interpretive strategy focused on this topic.

**Objective 1-4: People will engage in stewardship activities outside their home.**

**Potential Indicators**

- The number of new volunteers for conservation work on the Refuge or for partners sites will increase by 10% in the year after implementing an interpretive strategy focused on this topic.

**Interpretive Program Goal 2: Increased participation in appropriate nature-based activities.**

**Objective 2-1: An increase in number of visitor days spent participating in compatible nature-based activities on the Refuge [without exceeding carrying capacity and thus, damaging the resource] or off-site.**

**Potential Indicators**

- 15% Increase in number of vehicles on the Auto Tour in the year after implementing an interpretive strategy focused on this topic without commensurate increase in issues such as garbage left on the Refuge, citations, etc. (Note: This requires putting in a vehicle counter or some other means of tracking the number of vehicles on the Auto Tour.)
- 25% Increase in visitation at the Visitor Center in the year after implementing an interpretive strategy focused on this topic.
- 10% increase in visitation at nature-based sites in the area (such as parks, botanical gardens, arboreta, Tracy Aviary, etc.) in the year after implementing an interpretive strategy focused on this topic without commensurate increase in issues such as garbage, citations, etc. at those sites.

- 10% increase in participation in classes offered by the Refuge or partner organizations that focus on some manner of recreating responsibly in nature, such as birdwatching, nature photography and flyfishing courses in the year after implementing an interpretive strategy focused on this topic. (This depends on whether such courses are offered.)
- Attendance at a conservation-themed event at the Refuge or collaborators/partners will increase by 20% over the next two years. (This depends on whether such an event is staged.)
- A 10% increase in membership in local conservation-minded organizations, such as the Friends of the Bear River Refuge, local Audubon chapters, Tracy Aviary, etc. every year for the next 5 years. (Note that the increase needs to be tied to interpretive elements implemented by the Refuge. This can be done by asking partners to survey new members as they join to find out how they found about the organization and what made them want to join. It can also be a more direct survey asking specifically if they are joining due to an experience at the Refuge or with outreach opportunities developed by the Refuge.)
- Participation in community science projects with the Refuge will increase by 10% over the next two years.

**Objective 2-2: Visitors will participate in at least one new outdoor activity in nature, such as birdwatching, nature photography, etc.**

**Potential Indicators**

- An increase of 15% in the year after implementing an interpretive strategy focused on this topic in purchase of items from the nature store associated with engaging in a new recreational activity in nature, such as items associated with beginning birdwatching.
- An increase of 15% in the year after implementing an interpretive strategy focused on this topic in social media posts of people engaged in new appropriate nature-based recreational activities. (This will likely have to be encouraged with the use of a hashtag.)
- 15% Increase in participation in beginning classes or events offered by the U.S. Fish and Wildlife Service or partner organizations that focus on recreating in nature, such as birdwatching, nature photography and flyfishing courses in the year after implementing an interpretive strategy focused on this topic.
- An increase in the number of people engaged in active recreation in nature (birding, angling, hunting) in the year after implementing interpretive strategies focused on this topic.

**Interpretive Program Goal 3:** Increased support for the Refuge and the U.S. Fish and Wildlife Service (this includes increased support for management decisions affecting the Refuge).

**Objective 3-1: A significant increase in the awareness that the Refuge is managed by the U.S. Fish and Wildlife Service, and the role it plays in supporting the quality of life for people living in the surrounding area.**

**Potential Indicators**

- A decrease by 10% annually each year for the next 5 years in the number of media communications or conversations with staff that include a reference to the Refuge as a park, or WMA.

- After engaging in a visitor interpretive experience offered by the U.S. Fish and Wildlife Service (on or off-Refuge), visitors who are residents will be able to name at least two ways in which the Refuge makes a positive contribution to their lives. (This can be addressed using an exhibit that asks visitors to write a brief note on how they are connected to the Refuge and having them display their answers in some way, such as clipping them to something.)
- Public participation in Refuge programs on or off site, including Environmental Education programs, Citizen Science Programs, etc. will increase by 5% annually each year for the next 5 years.

**Objective 3-2: Support for the Refuge, the U.S. Fish and Wildlife Service, and the NWRS will increase.**

**Potential Indicators**

- New volunteers at the Refuge from the local community will increase by 15% annually for the next 3 years.
- Membership in the Friends Group will increase by 10% annually for the next 5 years.
- The number of collaborators/partnerships (including non-profits and residents) will increase by 25% in the two years after implementing new interpretive opportunities focusing on this topic. (This can be an indication of increased support due to pressure by members of partner organizations and collaborators in the Refuge.)
- Significant contributions by collaborators/partners/volunteers to Refuge outreach and on-site events and activities will increase by 1 annually for 5 years. (See note above.)
- Youth actively supporting efforts at conserving natural resources will increase by 15% in the year after implementing an interpretive strategy focused on this topic.
- The ratio of people posting positive comments in social media to people posting negative comments about the Refuge will double annually each year for the next 5 years.
- The Friends Group will increase the number of activities they engage in by 2 per year for 5 years due to increased membership and therefore, capacity.

**Note:** Collaborators are defined as organizations that support and send messages consistent with those of the USFWS.

**Objective 3-3: Negativity regarding the Refuge, the U.S. Fish and Wildlife Service, and the NWRS will decrease.**

**Potential Indicators**

- A 15% reduction in complaints in the year following implementation of an interpretive strategy addressing a specific management practice, such as allowing wetlands to dry out, using wildfire to manage habitats, using hunting as a management tool, and removing invasive species.
- An increase in positive versus negative posts on social media each year for the next 5 years.

**Interpretive Program Goal 4:** All visitors feel welcome to the Refuge and safe when exploring the recreational opportunities at the Refuge and in nature in general.

This goal was included in part because apprehension of areas dominated by nature by many urban dwellers was identified as a barrier to engagement. Reducing apprehension is likely to require both increased knowledge of nature (reducing fear of the unknown) and gaining confidence related to exploring such places, which will come through repeated exposure. Also, one of the keys to making visitors feel comfortable visiting the Refuge is to increase their confidence that they can find their way around the unfamiliar environment and know what to expect. This is addressed through a good orientation and wayfinding network.

**Potential indicators**

- 10% annual increase each year for the next 5 years in use of the Refuge and other areas dominated by nature by residents.
- 10% annual increase each year for the next 5 years in use of the Refuge by underrepresented populations within the overall priority population.
- Complaints reflecting getting lost or having to spend more time than expected visiting the Refuge (such as the experience of driving the Auto Tour) will decrease by 25% in the year following implementation of the orientation and wayfinding network.
- A decrease of 25% in questions indicating confusion regarding wayfinding in the year following implementation of the orientation and wayfinding network.
- An increase of 15% in local children and families who seek recreational experiences in nature, whether at the Refuge or in other areas in the areas easily accessible to the priority population in the year after implementing an interpretive strategy focused on this topic.



# Message Hierarchy

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## Introduction

This section contains the messages for the Interpretive Program. They are the core of the stories presented in the interpretive opportunities. The messages follow guidance from [The Language of Conservation](#) and input from Refuge staff. [The Language of Conservation](#), commissioned by the Nature Conservancy, provides recommendations for communicating effectively to build support for conservation.

## Interpretive Messages, Sub-Messages and Supporting Stories

**Interpretive Message 1:** Nature is important to your quality of life.

**Support for Interpretive Goals:** Communicating this message directly supports Interpretive Goal 1. It assumes that if people believe nature is important to their quality of life, they will engage in more stewardship behaviors regarding nature. If they believe nature is important, they are more likely to support the Refuge and the U.S. Fish and Wildlife Service, which supports Interpretive Goal 2.

**Discussion:** If people do not think nature is important, the other messages are unlikely to achieve the desired outcomes. The key point that needs to be made is that nature is an important component of quality of life, and therefore, the NWRS is an important component of quality of life because it restores and conserves nature.

**Sub-messages and supporting stories:** This message has several sub-messages based on the different lifestyles of the members of the priority population. Potential sub-messages include the following:

**Sub-message 1-1:** Pollinators critical for pollinating local crops, and consequently, the agriculture industry, depend on native habitat to survive.

**Note:** *This would be a good message for interpretive information associated with local bakeries and restaurants, or with food trucks that are present during an event.*

### Examples of supporting stories

- The role of hummingbirds as pollinators.
- The role of non-charismatic insects such as moths, flies, native bees, beetles, and wasps as important pollinators.
- Fruit trees, such as peach trees and cherry trees, depend on pollinators for producing fruit. (No Peach Day in Brigham City without pollinators.)
- Local pollinators pollinate crops such as alfalfa, which is sold around the world and which feeds beef and dairy cattle.
- Honey is a product of bees.

**Sub-message 1-2:** Nature provides recreational opportunities that are part of the quality of life for many residents.

**Examples of supporting stories**

- The role of the Refuge in providing hunting, especially for waterfowl.
- The importance of wetlands to help clean water to support fish populations, which in turn provide opportunities for recreational anglers.
- The role of the Refuge in supporting tourism, an important part of the economy.
- The importance of having natural areas to walk and hike where people can see and photograph wildlife and wild places.
- National wildlife refuges are unique, offering experiences you cannot find elsewhere, including glimpses of the natural world as it used to be.

**Sub-message 1-3:** Nature has always played and continues to play an important role in a healthy lifestyle for all cultural groups living in the area.

**Examples of supporting stories**

- Research shows that one of the most effective reducers of stress are bird calls.
- Research shows that simply viewing nature reduces stress.
- Research has long indicated walking is a good activity for maintaining health, so walking in natural areas would help maintain health and reduce stress.
- Many current medicines and important products come from native plants, such as the floss from common milkweed used to make hypoallergenic bedding (comforters and pillows).
- Studies show that children who spend time in nature are happier and have better immune systems.
- Native American lifestyle depended heavily on the natural world for food, medicines, materials, etc.
- Natural areas reduce air pollution by keeping toxic dust from blowing into communities.

*Note: Additional supporting stories can be found under sub-message 6-1.*

**Sub-message 1-4:** Nature helps maintain the way of life of residents.

**Examples of supporting stories**

- Natural areas help groundwater recharging, which is important for water supply from wells.
- Nature provides opportunities to hunt birds and wildlife.
- Nature provides opportunities to fish.
- Nature supports tourism and associated economic activities, all of which bring jobs and revenue to the area.

*Note: Additional supporting stories can be found under sub-message 6-1.*

### **Other strategies for increasing the perceived value of nature**

It is not the purpose of this plan to focus on actions other than developing visitor interpretive experiences, but the following suggestions were included because of how important it is for priority audiences to value nature:

1. Develop a program that explores the role of nature in creating motifs and inspiring artworks of the cultural groups who have lived and continue to live in the area.
2. Explore the ways in which the ancestors of cultural groups who live in the area used nature to support their lifestyle. This could be in the form of classes, talks, presentations, etc. Topics could include making and using natural dyes; basket making; medicinal plants; food plants (this is essentially the 'incredible edibles' idea in a different format). Native Americans using common milkweed sap for warts and teaching settlers how to cook and eat with it fits in this category.

**Interpretive Message 2:** Bear River Migratory Bird Refuge provides many benefits to you.

**Support for Interpretive Goals:** This message supports Goal 3. If people understand that the Refuge provides benefits to them, they are more likely to support management actions at the Refuge and support the U.S. Fish and Wildlife Service.

**Discussion:** Although this is similar to Interpretive Message 1, it is more specific to the Refuge. Message 1 helps guides programs developed with partners, whereas Message 2 helps guides development of interpretive opportunities specific to the Refuge.

**Sub-messages and supporting stories:** (There are no sub-messages – only supporting stories.)

#### **Examples of supporting stories**

- The Refuge helps support the economy of the area by attracting visitors from all over the world who stay overnight, purchase meals and fuel, and by extension, create jobs, help fund hospitals and schools, and support services residents value. (The Refuge is the #1 tourist destination in Box Elder County.)
- The Refuge provides a wide array of desirable nature-based recreational opportunities to the residents of the area, such as hunting, angling, photography, and bird watching.
- Wetlands filter and cleanse water, helping maintain water quality and consequently, fish and other aquatic life, which is important for angling.
- The wetlands are important for maintaining populations of migratory birds in the face of climate change.
- Wetlands upstream trap topsoil so it is not lost through erosion, and which also keeps it out of rivers and streams where it could destroy fish spawning habitat.
- Wetlands support many species of birds that people enjoy, such as songbirds and waterbirds. (The Bear River delta is critical for nesting cinnamon teal, ibis, and avocets.)
- The Refuge is important to pelicans. They rest and feed on the Refuge.
- The Refuge has a positive impact on the quality of hunting in Wildlife Management Areas (WMAs) of the State.

- Healthy Refuge habitats have a positive impact on the Great Salt Lake, its ecosystem, and those industries and citizens that rely on the Great Salt Lake for a living (such as winter sports, brine shrimp harvesting and export, and magnesium harvesting and export).
- The Refuge is a key part of the Great Salt Lake Birding Festival, which helps support the economy of the area.

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Support for Interpretive Goals:** This message builds on Message 1. If people understand that nature is important to their quality of life, this helps direct their stewardship actions, which in turn supports Goal 1.

**Discussion:** This is a key concept that underlies everything that the U.S. Fish and Wildlife Service does, including the actions on the Refuge. The addition of “. . . *specific* habitat . . .” provides the opportunity to emphasize that some species are adapted to specific habitats and will go extinct if the habitat disappears.

**Sub-messages and supporting stories:** The best supporting stories are going to be ones where the public values a species in some way. The milkweed and monarch butterfly relationship is one of the simpler combination of features that supports the story of the importance of specific habitat to wildlife. One of the advantages of the monarch butterfly-milkweed story is that monarch butterflies are one of the few charismatic microfauna, plus, monarchs pollinate wildflowers.

**Sub-message 3-1:** Conserving native flora and fauna that depend on Bear River Migratory Bird Refuge focuses on preserving and restoring the habitat they depend on for survival.

#### **Examples of supporting stories**

- The use of prescribed burns to maintain native habitat.
- Allowing wetlands to dry out and flooding wetlands periodically mimics what happens in the natural world helps preserve native habitat. That is why the U.S. Fish and Wildlife Service moves water around the Refuge.
- Migratory waterfowl depend on the Great Salt Lake ecosystem as a stop-over spot for their journey north and south during migration. The Great Salt Lake ecosystem depends on Bear River (2/3 of the water entering the Great Salt Lake comes from Bear River), so preserving the Bear River watershed and its associated native species helps preserve migratory waterfowl.
- Different bird species require different types of habitats, such as shorebirds requiring shallow water while ducks, swans and geese need deeper water.
- Different bird species use the same areas at different times because the right conditions are met for their needs at different times.
- Wetlands filter water of impurities, thus they are critical to maintaining the quality of water many species depend on as part of their habitat.

- Habitat needed for survival of migratory species of birds and insects such as pollinators includes nesting and resting areas along their migration routes, so those areas must be preserved also. Without them, they will not survive. That is why the U.S. Fish and Wildlife Service and other conservation organizations across the world protect key resting stops along migratory pathways in addition to breeding and wintering grounds to ensure the survival of migratory birds and insects such as pollinators.
- More than 210 species of birds use the Refuge, including iconic species such as the American white pelican, which breeds in the Great Salt Lake and feeds on the Refuge, the American avocet, which utilizes the Refuge for breeding and staging, and the black-necked stilt.
- The Refuge, as part of the Great Salt Lake ecosystem, is recognized as a globally important shorebird area, supporting up to 500,000 waterfowl and 200,000 waterbirds annually.
- The Refuge supports about 45+% of the North American breeding population of white-faced ibis.
- The Refuge hosts up to 26% of the North American population of marbled godwits during migration.
- The Refuge hosts up to 32% of the North American population of tundra swans during migration.
- Depending on the species, the Refuge is sometimes a southern extent, a northern extent, a midway migration stopover, or a permanent home range. Birds from both the Arctic Circle and South America come here for some portion of their year.
- Using water for development and agriculture has altered the habitat for many species of waterfowl and other wildlife, which is why water in the Bear River watershed must be managed and why water must be moved around on the Refuge.

**Interpretive Message 4:** Everything in an ecosystem is linked and everything plays a part. Impact on one component has a ripple effect through the rest of the ecosystem.

**Support for Interpretive Goals:** This directly support Interpretive Program Goal 3. If people understand this concept, they are more likely to support agency management decisions regarding the Refuge.

**Discussion:** The point of this message is for people to understand that maintaining one species of wildlife may require maintaining myriad parts of the ecosystem on which that species depends, such as actions to maintain water quality, maintaining a network of Refuges along a species migration path, etc.

**Sub-messages and supporting stories:** (There are no sub-messages – only supporting stories.)

#### **Examples of supporting stories**

- Healthy uplands lead to healthy wetlands.
- Aquatic invertebrates depend on clean water; some birds depend on the invertebrates; hawks/eagles depend on the birds that eat invertebrates, and so forth.
- Managing wildlife is about managing the habitat. If you provide healthy water and air, and space, then wildlife will thrive.

- How we use water upstream and downstream from Bear River Migratory Bird Refuge can impact the health of the habitat and therefore, the wildlife that depend on those habitats.
- The health of the Great Salt Lake ecosystem depends on the health of the Bear River watershed.
- Drying of the Great Salt Lake increases dust, dust darkens snow, darkened snow melts faster, faster snowmelt decreases the amount of water sent downstream overtime, less water dries the lake, which could lead to significant declines in air quality and increases in health issues.

**Interpretive Message 5:** Many people and organizations, including the U.S. Fish and Wildlife Service, are working to conserve and manage habitat to protect wildlife for people today and for future generations.

**Support for Interpretive Goals:** Coupled with Message 1, this message directly supports Goal 3. If people value nature and realize that the U.S. Fish and Wildlife Service manages to help conserve nature, they should support the agency.

**Discussion:** People are more likely to act in support of the U.S. Fish and Wildlife Service if they believe that the U.S. Fish and Wildlife Service is doing everything they can, and when they believe that their personal actions will make a difference.

### **Sub-messages and supporting stories**

**Sub-message 5-1:** Bear River Migratory Bird Refuge is here because of people like you, including hunters, volunteers, the Friends Group, and others.

#### **Examples of supporting stories**

- The story of the establishment of the NWRS and the Refuge, primarily through efforts of hunters.
- The stories of volunteers who help replant Refuge lands with native vegetation, and/or who help in other ways.
- The stories of the Friends Group and their contributions.
- The support of Brigham City, as exemplified by the arch on Main Street.

**Sub-message 5-2:** Because individual actions add up incrementally to significant impacts, you can play an important role in maintaining natural resources, and on conserving and recovering wildlife.

There are myriad ways of saying this, including, “you are either a part of the solution or part of the problem.” This version speaks specifically to the reader and is positive. Regardless, the key is to empower people so they have confidence that whatever small part they can play is important in the grand scheme of things. This will be important when trying to motivate people to plant native plants in their yards and take other small steps that help the environment.

### Examples of supporting stories

- Actions taken by residents daily cause positive and/or negative impact on the natural environment.
- Many of the more environmentally friendly options are more cost effective – planting native plants will save more on water, going solar can save more on power, etc. Going green can help save money.
- Choosing fruits and vegetables that are grown in areas suitable for them (meaning they have the right amount of water from the local ecosystem) is a way to help conserve the local environment. (Resource: *Foods (& Crops) That Take The Most Water To Produce & Make - Better Meets Reality.*)
- The Bear River Watershed Conservation Area works with private landowners to provide habitat for migrating birds and other wildlife.

**Sub-message 5-3:** Humans can determine what organisms live and what die in the watershed by impact on habitat. Those impacts affect humans since humans are a part of the ecosystem.

*Note: This cannot be presented as a ‘doom and gloom’ story because research has shown that the doom and gloom approach is not effective.*

Another way of stating this is that people are a part of ecosystems, so everything they do has impact on other parts of the system. Even incremental positive changes can benefit the system. Ideally, we want this to be taken to the individual level, so people feel that they can make a difference by planting native plants in their yards, recycling, conserving water, and engaging in other actions associated with a sustainable lifestyle.

### Examples of supporting stories

The following are some, but not all the stories that can support this sub-message based on the tangible features on the Refuge or other features in the area.

- The absence of many biological organisms in the area outside the Refuge due to modification of habitat by humans.
- The return of species as habitat is restored.
- Many pollinators that are crucial for plants that provide foods we enjoy are endangered due to human activities that eliminate habitat.  
*Note: Proving this story requires showing how pollinators affect foods we enjoy, which could involve any business or institution that sells food and showing how human activities have both positively and negatively affected pollinators. This should be followed by a ‘Call to Action’ to let people know what they can do on an individual basis.*
- Human activities, including development, have fragmented habitat for many species which has a negative effect. This has resulted in the need to manage wildlife.
- Using water for development and agriculture has altered the habitat for many species of waterfowl and other wildlife in the Bear River watershed, which is why Bear River must be managed and why water must be moved around on the Refuge.
- Managing wildlife populations and hunting of those populations leads to healthier populations of wildlife, which will lead to better hunting opportunities.
- Environment influences us – where we live, what we eat, the jobs and opportunities that exist here. If we do not take care of it (specifically the Great Salt Lake) the influence will become a negative one.

**Sub-message 5-4:** The U.S. Fish and Wildlife Service manages the resources of the Refuge to benefit wildlife and the quality of your life.

**Examples of supporting stories**

- Any example of managing a resource for the benefit of wildlife, especially wildlife that residents value. Managing various water depths in the impoundments to allow for different birds like nesting snowy plovers and diving ducks that have totally different needs.
- Managing resources to support hunting.
- Managing wetlands that help clean water to support fish populations, which in turn provide opportunities for recreational anglers.
- The role of the Refuge in supporting tourism, an important part of the economy.
- The importance of having natural areas to walk and hike where people can see and photograph wildlife and wild places.
- National wildlife refuges are unique, offering experiences you cannot find elsewhere, including glimpses of the natural world as it used to be.
- The Refuge has accessible places to view wildlife, our walking trails have been made accessible. Our auto tour gives visitors opportunities to view and experience wildlife in a more controlled environment to help them feel more comfortable.

**Interpretive Message 6:** Water conservation in the Great Salt Lake ecosystem is essential and Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

**Support for Interpretive Goals:** This message directly supports Goal 3 because it connects what they value to the actions of the U.S. Fish and Wildlife Service at Bear River Migratory Bird Refuge.

**Discussion:** People are more likely to act in support of the U.S. Fish and Wildlife Service if they believe that the U.S. Fish and Wildlife Service is doing something positive for their quality of life.

**Sub-messages and supporting stories**

**Sub-message 6-1:** Residents of the Great Salt Lake (GSL) ecosystem depend on its health for their quality of life.

**Examples of supporting stories**

- The snow will decrease if the GSL is lost due to snow darkening because of dust. Loss of snow affects winter tourism and recreational opportunities for residents.
- Significant drying of the GSL will lead to release of poisonous elements such as arsenic, lanthanum, lithium, zirconium, cobalt, manganese, and copper. These all can cause acute or chronic health effects.
- In general, dust particles cause poor air quality and low visibility.
- The story of the Aral Sea. Due to overuse, the Sea dried up in only 50 years (1960-2009). It only exists now at 5% of its historic surface area. After the Sea dried up, the local fishing economy died, harmful dust plumes arose, infant mortality spiked, salt



contamination prevented using the soil for crops, and without the Lake to help control temperatures, hot and cold weather reached new extremes.

- The story of Owens Lake in southern California. The lake dried up in 1913 after a diversionary aqueduct was built on the Owens River, the main water source for the lake, leading water to Los Angeles. The resulting exposed lakebed is the single largest dust source of PM10 (harmful, large particle dust) in North America. In 1999, Owens Lake was releasing over 52,000 tons of dust laced with arsenic and cadmium each year. The state of California has spent over \$2 billion to reduce the dust.
- Water conservation efforts always cost more after the water is already gone. By extrapolating the \$2 billion cost to maintain the Owens Lake dust by the 15-19 times larger surface area of the GSL, the state of Utah could be looking at a \$59 - 65 billion cost to mitigate dust, which would be important because 100,000s of tons of harmful dust would blow right into Salt Lake City.
- The annual economic output of the GSL, which depends on the health of the ecosystem, is estimated at \$1.5 billion.
- The GSL ecosystem provides 7,000 jobs in industries like mineral acquisition, brine shrimp farming, and recreation.
- About 40% of the world's brine shrimp are farmed and collected from the GSL. These tiny saline-loving shrimps are shipped all over the world as live food used for fisheries and shrimp farming operations. If the natural brine shrimp/algae co-regulatory cycle in the GSL becomes disrupted, water treatment work would be necessary to prevent harmful algal blooms.
- Between Utah State Parks, Wildlife Management Areas, and the Refuge, the GSL supports over 990,000 visitor days and 120,000 hunter days. To lose these would result in significant financial losses to both recreation opportunities and tourism.
- Between diminished Lake-driven business, less Lake access for everyone (recreation, minerals, and brine shrimp), increased soil salinity that would prevent the growing of crops on the exposed land, increased land bridges that could dangerously impact nesting bird populations due to predation, an increase in invasive plants like phragmites, and increased mitigation and control costs, the drying of the GSL could cause an estimated net loss of \$1.69 billion a year to the state of Utah.

**Sub-message 6-2:** Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

#### **Examples of supporting stories**

- The Great Salt Lake gets 2/3 of its water supply from Bear River, the lower part of which is managed by the Refuge.
- Loss of water from the Bear River would accelerate the drying out of the GSL, resulting in the impacts noted under sub-message 6-1.
- Migrating birds, particularly shorebirds, use the GSL in addition to Bear River. The habitat we have already discussed, is necessary throughout the GSL ecosystem.
- As the largest freshwater component of the GSL ecosystem, the Refuge provides critical feeding habitat for species such as pelicans that fish here.
- Bear River Watershed Conservation Area easement program is an important component supporting water conservation in the Great Salt Lake ecosystem. The program focuses on water conservation on farmlands along the Bear River through Utah, Wyoming, and

Idaho. Working in partnership to support future farming and ranching generations helps support an economy of food production while promoting upstream water conservation to benefit humans, fish, and wildlife downstream.

**Interpretive Message 7:** Managing the Bear River Migratory Bird Refuge for wildlife habitat while supporting public use and maintaining flow of the Bear River to feed the Great Salt Lake ecosystem is a complex and everchanging challenge.

**Support for Interpretive Goals:** This message directly supports Interpretive Goal 3. If people believe management of the Bear River Migratory Bird Refuge benefits their quality of life, and they believe that the U.S. Fish and Wildlife Service is doing everything it can under the circumstances, they are more likely to actively support the Refuge.

**Discussion:** This is the message linked to people understanding why wetlands are sometimes dry, which has been a source of criticism, why prescribed fire is used and other management strategies that are not understood. It is also linked to understanding why the public cannot access parts of the Refuge, which is also a source of criticism.

### **Sub-messages and supporting stories**

**Sub-message 7-1:** The U.S. Fish and Wildlife Service uses science and understanding of natural processes to help meet the challenge of managing for wildlife and people.

#### **Examples of supporting stories**

- Using the nature fire regime as a part of management.
- The Refuge manages water, including drying out wetlands periodically, to mimic natural hydrological conditions to the best extent possible. Factors such as climate change, reduced water availability, and infrastructure often make this challenging.
- Managing and moving water around the Refuge, which involves periodically drying out wetlands, is necessary for maintaining habitat for all species the Refuge supports.
- Most areas of the Refuge are closed to the public for most of the year – during nesting season areas will be closed even to staff. This provides as minimal disruption to the wildlife as possible. The Refuge opens as much of the Refuge as possible to the public within the priority for conserving wildlife habitat and species.

**Sub-message 7-2:** Resource management changes in response to enhanced understanding of birds and other wildlife, natural processes, and changing human-caused impacts on the natural resources.

#### **Examples of supporting stories**

- Management continues to evolve based on changes in climate, new science, and changes in wildlife populations, such as the populations migratory birds.
- The eras of wildlife management all reflect changes based on science, knowledge, and other factors.
- Wetland enhancement is crucial due to human impacts on the ecosystem.

# Visitor Interpretive Experiences

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## Pre-Visit Experience: Choosing to Engage

### Introduction

The first challenge is to motivate visitors to engage with information about the Refuge, specifically, the Refuge Website. One role of the off-site information network is to market experiences at the Refuge so potential visitors are aware of the Bear River Migratory Bird Refuge, that the Refuge welcomes all visitors, and that it offers attractive (and safe) experiences for visitors. The network must use a variety of strategies to market the experiences at the Refuge because members of the target audiences differ on how they gather information. Regardless of the strategy, all should be trying to make people aware of the Bear River Migratory Bird Refuge, that it offers attractive visitor opportunities, that it welcomes visitors, and of where a potential visitor can get additional information.

Given the location of target audiences, key locations for information about the Refuge are partner sites that offer similar experiences and are closer to population centers. This includes the Tracy Aviary, Ogden Nature Center, Jordan River Nature Center, and Eccles Learning Center at Farmington Bay.

### Choosing to Engage: Future Experience

Potential visitors will be able to obtain the Refuge Map/Brochure at multiple off-site locations, and continue to be apprised of programs and events, such as Swan Day and Owl Day, with leaflets. In addition, the U.S. Fish and Wildlife Service will develop a Portable Exhibit to be loaned to different sites throughout the Project Area and add a few outreach opportunities based on circumstances and return on investment.

### Choosing to Engage: Summary of Strategies and Actions

The following information strategies and actions will facilitate engagement with the Website, or visits to the Refuge, by potential visitors:

- **Traditional Mass Media:** This includes newspapers, radio stations and television stations used by target audiences.
- **Portable Exhibit:** This exhibit can be set up easily and the components changed out quickly. Specific exhibit layouts could be designed, and all the necessary information packaged together with instructions for assembly, so the exhibit could be used in a variety of settings and easily set up by anyone. Although it could be a stand-alone and not staffed by someone from the Refuge, ideally it would be designed to motivate viewers to ask questions that could then be answered by a staff member. Possible locations for this exhibit include the Eccles Learning Center at Farmington Bay, the Ogden Nature Center, and the Jordan River Nature Center.

### Other Outreach Strategies

The following suggestions for additional outreach strategies should be periodically reviewed to determine which ones are feasible (which depends in part on whether events in which the U.S. Fish and Wildlife Service could participate are occurring), and which ones are likely to yield the best return on the investment in resources, especially staff and volunteer time:

- Booth at Partners in the Park in Salt Lake City.

- Taking the River Trailer to events and festivals, especially in Ogden and Salt Lake City.
- Doing something at the Ogden Farmer's Market.
- Taking the fire engine to the Peach Parade in Brigham City and the Pride Parade in Ogden.
- Conduct a Bear River MBR photo contest and post the images at Café Ibis and other locations in the priority communities.
- Display the entries to the Junior Duck Stamp contest at other locations in the priority communities, such as the airport, Jordan River Nature Center, Ogden Nature Center, the Brigham City Art and History Museum, and Eccles Learning Center at Farmington Bay, especially in September and October just prior to the launch of the next year's contest.
- Conduct an Art in Residence session at the Refuge and display the art in different locations in the Project Area.
- Develop a traveling photography exhibit and display it at different locations in the Project Area.
- Have a contest to create birds from recycled materials.
- Work with the Natural History Museum to create a display.
- Conduct a 5-K or half-marathon on the Refuge (the Auto Tour is close to a half-marathon distance so it could be staged from the Outdoor Activity and Program Center with food trucks and other supporting opportunities).

## Pre-Visit Experience: Trip Planning

### Introduction

Whether they follow up on the Internet, call the Refuge, or pick up a brochure at an off-site location, people interested in visiting the Refuge need information to plan their trip. Many people will look for more information on the Internet. For those without access to the Internet, the telephone is usually an option. Regardless of the source, potential visitors should be able to easily find out all they need to know to plan a trip, such as hours of operation, what to bring, how to get to the Refuge, how long a visit might take, etc. Potential itineraries based on time (if you have a half-day, do this, etc.), or activity (if you want to see wildlife, plan to spend a few hours on the Auto Tour) make it easier for a person to plan a visit, which increases the likelihood of them doing so.

### Trip Planning: Future Experience

After learning about the Refuge, potential visitors can go to the Refuge Website, where they have the option of viewing a Video Tour of Bear River Migratory Bird Refuge\* and downloading the Refuge Map/Brochure to help plan their visit. The 'Visit Us' section of the website contains information on visitor activities and opportunities organized by month, along with information on how to prepare for a visit at that particular time of year. For more information on specific activities, the visitor can go to the 'Visitor Activity' section, which uses images of people taking part in recreational activities, along with information specific to that activity. The website also has potential itineraries organized by time and by type of activity.

*\*Note: At this time, the official Refuge Website is restricted regarding what can be displayed, which includes the Video Tour of Bear River Migratory Bird Refuge and Audio Auto Tour Podcast. Those could be made available on the Friends of Bear River Refuge website via a link.*

## Future Trip Planning Experience: Summary of Strategies and Actions

The following information strategies and actions will facilitate trip planning while also continuing to promote the Refuge as a destination attraction. Note that the strategies associated with an actual visit are described in other sections.

- **Refuge Website:** This strategy exists but needs to be modified if possible. To be most effective, the website should be re-organized to make it a marketing and trip planning strategy first. This does not mean eliminating information currently on the site, but rather moving some of the information so it is easily accessed with the use of tabs. Distances, such as the distance to and around the Auto Tour, should be presented in time required in addition to the distance.
- **Video Tour of Bear River Migratory Bird Refuge (on Refuge Website):** The purposes of this strategy include motivating visitors to spend time at the Refuge, sending messages, and providing an in-depth experience of the Refuge for people not physically able to visit the Refuge with the intent of creating an emotional connection.

*Note: They can also download the Audio Auto Tour Podcast\* and the Discovery Guide (component of the Jr. Ranger materials) from the website, but those are components of the Primary Experience and are described in that section.*

## Pre-Visit Experience: Travel

### Introduction

This is typically the part of the experience between when visitors leave home and when they arrive at the Refuge. However, visitors coming for a program at the Outdoor Activity and Program Center may choose to skip the Visitor Center, which means the 'Travel' part of the experience could include the trip to that part of the Refuge. The key information needed during this part of the experience is wayfinding information. Although many visitors will use GPS on smart phones, many will still rely on a map and directional signage. Even those using GPS use directional signage for confirmation of a route.

### Travel: Future Experience

Visitors arriving by way of the freeway easily find the Visitor Center because the exit is well-signed. Visitors coming from Corinne, UT or Golden Spikes National Historic Park will easily find their way to their destination due to an updated sign on 2600 West that directs people to both the Auto Tour and the Visitor Center. If they head directly to the Auto Tour, confidence markers will reassure them that they are headed in the right direction.

## Future Travel Experience: Summary of Strategies and Actions

- **Updated sign on 2600 West** directing travelers to the Auto Tour and Visitor Center.
- **Confidence markers** between the Visitor Center and beginning of the Auto Tour (at a minimum).

## On-Site Experience: Arrival

### Introduction

Upon arrival, visitors must have immediate access to restrooms and orientation, wayfinding and site-specific trip planning information because these are needs and interpretation is an option. When they finish with this stage of their experience, they must be aware of the location of the restrooms (even if they don't use them on arrival), aware of sources of information regarding upcoming programs and events, aware that a person is available to answer questions, aware that the Visitor Center has a nature store, have a plan for their visit, and know how to begin their experience.

Aside from making visitors feel welcome, the goals of the information network in the Arrival Experience include the following:

- Motivate visitors to spend some time at the Visitor Center and then to explore the Refuge (take the Auto Tour).
- In the parking area, facilitate the transition from vehicular travelers to confident pedestrians, which requires travelers knowing where they are going when they exit their vehicles.
- Move visitors quickly and with little mental effort on their part from where they parked to the location where they can meet their needs (restrooms, drinking water, place to get a map). This will vary depending on whether the facility is open or closed.
- Make visitors feel confident in their ability to find their way around what is for most of them, an unfamiliar environment. If the desire is for visitors to explore the Refuge, they must feel comfortable exploring. Until then, they cannot give their complete attention to the interpretive experience. Note that this includes exploring the grounds around the Visitor Center and finding their way to the Auto Tour.
- Help facilitate an initial impression that tells the visitor that the U.S. Fish and Wildlife Service thinks Bear River Migratory Bird Refuge is an important Refuge, that the wildlife is important, that the Refuge has a lot more to offer than just visiting the Visitor Center, and that visitors are a high priority and very welcome.

### Arrival: Future Experience

Visitors will easily find where they are supposed to park (mobility accessible or not). The area will appear well maintained, the barbed wire on either side of the gate has been replaced with more attractive fencing, and the birds on the gate and fence have been removed. An entry sculpture or piece of artwork creates a focal point for the entry (note that the birds currently on the gate and fence can be used in the new sculpture or piece of artwork if appropriate.) The sign on the fence to the right of incoming traffic has been replaced. It is now a welcome sign for visitors entering the site and a 'Thank You For Visiting' and 'Auto Tour' with a directional arrow for visitors leaving the site. Most visitors will likely stop first at the new kiosks where they can find the map of the Refuge and auto tour and message overview.

If the building is open, new visitors will likely start their experience by crossing the boardwalk and entering the building. They will understand that this is a U.S. Fish and Wildlife Refuge because of the prominent words on the building, 'Bear River Migratory Bird Refuge' and 'Visitor Center' in bold, dark letters easily visible from a distance, and the logo. Upon entering, they will get a sense of the national and international importance of the site in part because the word 'Welcome' is written in multiple languages on the front door or interior wall to their left, just past the nature store (this can also help people of other cultural backgrounds feel more welcome) plus the name of the Refuge is prominent

adjacent to the entryway. Upon entering, they encounter the impression of flocks of birds, complete with their calls, in the entry hallway. The ambience reinforces the fact that they are in a migratory bird refuge. (Since this is ‘ambience,’ if it breaks down, there is no obvious hole in the experience.)

Visitors entering the building by the main entry will immediately be aware of the nature store, an exhibit in the space currently housing the air boat, the exhibit hall, the information desk and a self-serve orientation area. Visitors using the entrance from the mobility accessible parking cannot see everything in the lobby, but they will be aided by a directional sign (like a street sign) at the intersection of the main and side access corridors, which provides direction to the restrooms, the outdoor classroom and play area, the trails, and the auditorium. Note that the existing signage on the pole in the lobby has been removed, as has the pole.

Visitors are likely to proceed to either the information desk or self-serve orientation area and collect any information they need for orientation, wayfinding and site-specific trip planning. At this point their needs are met and they are ready to engage in their Primary Experience, which could be to walk the nature trails in the back, visit the outdoor classroom and play area, take in the exhibits, attend a program in the auditorium, or head toward the Auto Tour.

If the building is not open, visitors can take the new boardwalk (see Figure 1 on the following page) to the back of the building and use the restrooms.

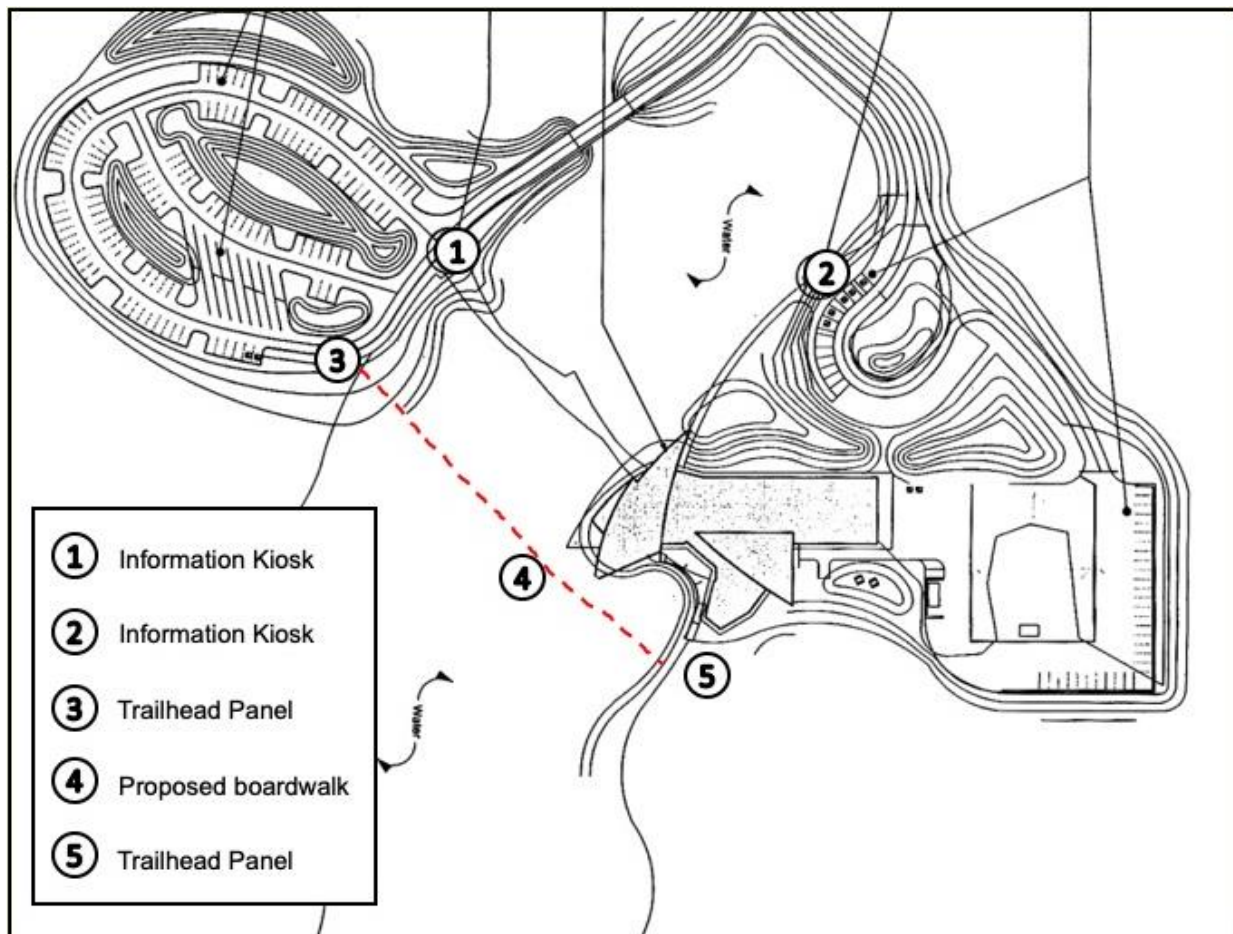


Figure 1: Location of strategies to enhance Arrival Experience

## Future Arrival Experience: Summary of Strategies and Actions

- Replace barbed wire as fence on either side of gate with fencing that is more attractive.
- Remove birds on gate and fence.
- Add sculpture or piece of artwork located so it is the focal point as people enter.
- Replace sign on the fence to the visitor's right as they enter. New sign will be a Welcome sign for visitors entering, and a 'Thank You for Visiting' and 'Auto Tour' with a directional sign for visitors leaving.
- Add a large identification title on building saying, "Bear River Migratory Bird Refuge." Replace words "Education Center" with "Visitor Center." Add the U.S. Fish and Wildlife Service logo.
- Improve maintenance to enhance the impression of the site as 'cared for.' At a minimum, this would be removal of grass growing in cracks on the sidewalks and parking areas and edging so vegetation is not growing over paved areas.
- Build a new boardwalk connecting the main access boardwalk to the trail at the back of the building. This not only provides quicker access to the outdoor classroom and play area and restroom, but it also transforms the trail system into a nested network of loop trails, which are more attractive to visitors.
- Design and install a strategy that gives the impression of flocks of birds flying overhead and the sounds that they make in the first part of the entry hall. Given the desire to create the impression that the birds are flying away, technology is probably necessary, although it could be light moving along artwork of birds located on the ceiling. Note that with directional sound, people staffing the front desk will not be subjected to the continuous call of the birds.
- Add directional signs in the center of the lobby with clear direction to the restrooms whether entering through the main entryway or the mobility accessible entryway.
- Put the word 'Welcome' in multiple languages on the interior wall adjacent to the entry hallway from the mobility accessible entryway.
- Remove the airboat and use the space for a variety of purposes, for example, displaying the Junior Duck Stamp contest submittals, housing a changeable exhibit, advertising upcoming events, or as a place for someone associated with an event to welcome and orient visitors to the event.

## On-Site Primary Experience: Visitor Center

### Introduction

After having their needs met, visitors then engage in the experience that attracted them to the Refuge. Regardless of the experience/opportunity, visitors will be exposed to interpretive components. In combination, the interpretive components guide them intellectually, emotionally, and physically through their experience with the Refuge, all the while establishing emotional and intellectual connections critical to motivating the visitors to act, not only to help the Refuge, but to protect their natural heritage.

Within the Visitor Center, the areas in which the visitor can engage in interpretive opportunities include the exhibit hall, the auditorium, the small theater and the area where the airboat is currently located. For ease of reading, these have been divided into the 'Exhibit Hall' and 'Other Public Areas.'



## Visitor Center Exhibit Hall: Future Experience

**Note:** *The basic infrastructure was not significantly modified other than eliminating the storage area to create more room in the exhibit hall.*

Visitors will pass under a flock of flying birds (aerial mounts) and under an arch similar to the one over the street in Brigham City to enter the exhibit hall. As they start up the wooden ramp, they encounter a small panel embedded in the floor entitled 'Reduce, Reuse, Recycle' followed by text in the form of a 'didjaknow' that tells them that the wood for the walkway was reclaimed from a railroad trestle across the Great Salt Lake. From the bottom of the ramp almost to the window on the wall to the visitor's left (refer to floor plan in figure 2), visitors encounter the following exhibits:

- A. **Oasis in the Desert.** This is the first part of a 3-part exhibit (Exhibits A-C) focusing on the journey of migratory birds and the importance of the Refuge. This first component has essentially the same focus as the 'Why Do Birds Come Here?' exhibit that currently occupies the same place. The difference is that it should flow into the 'Birds of the Refuge' exhibit.
- B. **Birds of the Refuge.** This second component is similar to the current exhibit along the 'boardwalk' at the beginning of the exhibit hall, but the backdrop has been changed to represent all the different habitats in the Refuge. Birds that use the Refuge are located in the habitat they are most likely to be found.
- C. **Where Do They Go from Here?** This is the final component of the 3-part introductory exhibit. It follows the journey of migratory birds who use the Refuge as a stopover for points north. This exhibit includes a component featuring the Fish Springs NWR, the Bear River Watershed Conservation Area, refuges to the north, and the National Wildlife Refuge System as a whole.

On the upper level of the exhibit hall visitors encounter exhibits focused on the history of the Refuge and some of the challenges in managing it over the years. Specific exhibits include the following:

- D. **Saving the Wetlands.** This exhibit focuses on why and how the Refuge was constructed. The story begins with the marsh dying due to lack of water and the resulting impacts on the birds that depend on the marsh, and the impact on people who depended on the Great Salt Lake in some way. It includes the rebuilding of the wetlands, the array of people and organizations who took part, and establishing the Refuge. It also documents the floods that wiped out the Refuge and the subsequent rebuilding of the Refuge.
- E. **You Manage the Refuge.** This is a computer simulation game in which participants try to manage the Refuge under different water conditions, which requires moving water around to accommodate different species during low water, or with a different goal, such as balancing benefits between different species or balancing recreation use with the needs of wildlife.
- F. **Creativity and Innovation – Keys to Effective Management.** This exhibit uses the air boat as a starting point for focusing on the need for an innovative approach to managing wetlands, which resulted in a modification of the air boat that was originally developed in Florida. Additional innovative and creative approaches over the years are also included in this exhibit. This will include a glassed over portion of the floor where people can look down beneath the boat and

see how shallow the water is and what lives under the water. Depending on the design, visitors may be able to get into the boat and perhaps have their picture taken.

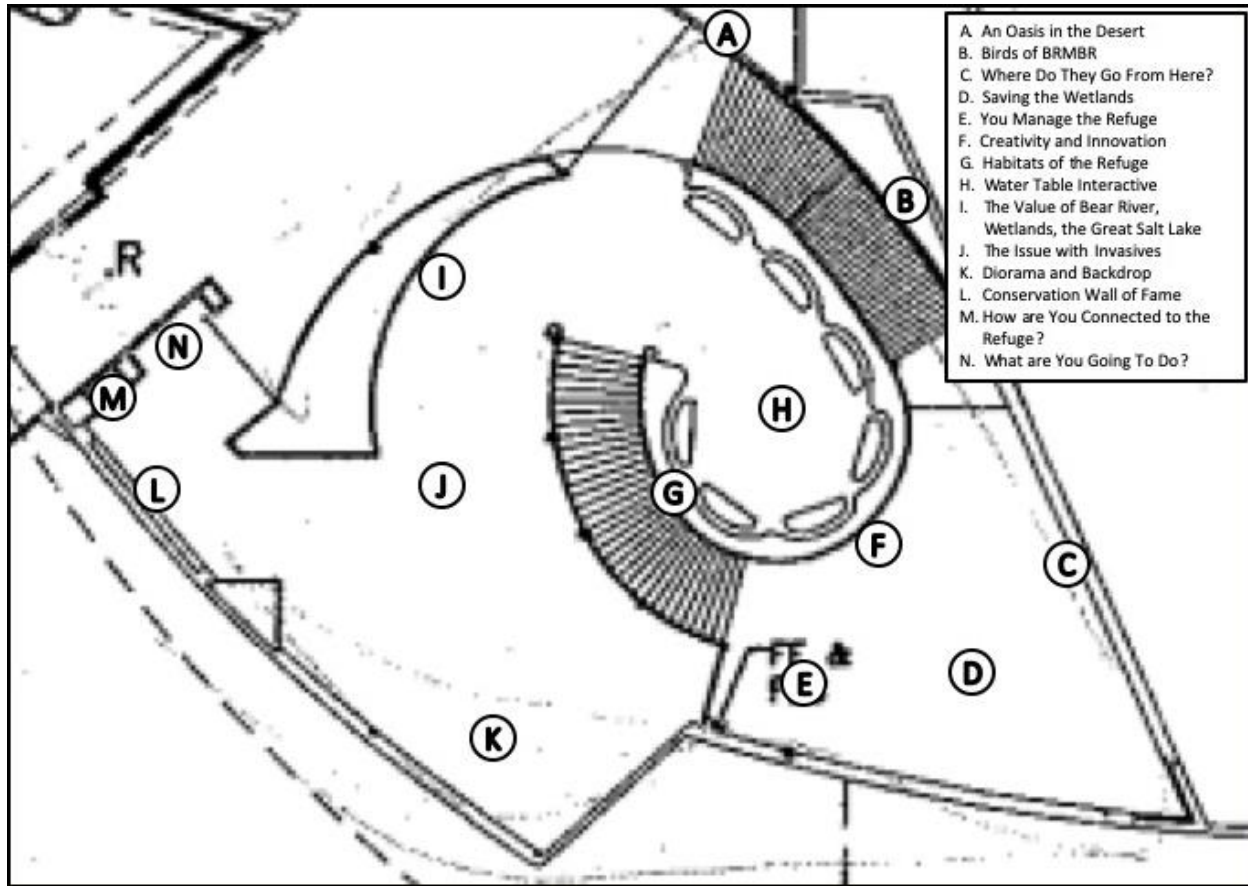


Figure 2: Exhibit locations in exhibit hall

Moving down the walkway from the upper level to the main floor, visitors encounter the following exhibit:

- G. **Habitats of the Refuge.** This exhibit, starting with the driest upland habitat at the top of the walkway to the wetland exhibits on the main floor, focuses on the different habitats found in the Refuge, the connections between the habitats, and a few of the species that live in each. The calls of birds associated with specific habitats are associated with the habitat being represented in the exhibit element.

Upon reaching the main floor, visitors encounter the following exhibits in the locations depicted on the graphic:

- H. **Water Table Interactive.** This exhibit offers a hands-on opportunity for young visitors to engage in manipulating the flow of water, while providing an opportunity for the parents to be facilitators of an interpretive experience. The table depicts wetlands in the Refuge – some deeper and some shallower. Uses can change flow of water in a ‘landscape’ to inundate or drain different areas of the Refuge, and to manipulate the water flow, and perhaps the landscape, in other ways. Parents are provided information in a written format that allows them to talk to

their children about the impacts of different ‘management’ decisions regarding flow of water. Panels around the outside provide visuals supporting the consequences of different management decisions, providing parents with an alternative source of information. (Note that the rock structures currently holding panels have been removed and the new panels located along the edge of the area to create more space.) In between the panels are benches for parents to sit. Another bench is located where the cylindrical exhibit on wetlands now sits.

- I. **The Value of Bear River, Wetlands and the Great Salt Lake.** This wall is now separated into 3 concave sections (scallops). The first one contains an exhibit component focusing on the value of Bear River, the second on the value of wetlands, and the third on the value of the Great Salt Lake. ‘Value’ is in terms of what the target audience considers value. Although there are 3 separate exhibit components, it should be clear that they are connected, so impacts upriver are felt downriver and in the lake.
- J. **The Issue with Invasives.** This exhibit focuses on the negative impacts of invasives on the native flora and fauna and consequently, on the value of the Refuge from the perspective of the target audiences. The goal is for people to understand that invasives threaten their quality of life as they define it.
- K. **Diorama and backdrop from GSL to Wasatch Front + Bear River.** This exhibit highlights Bear River as the key to the health of the Refuge, to the health of the GSL, and therefore, to the quality of life enjoyed by those in the area. The background visual and associated section of diorama at the far left as you face the diorama represents the GSL. The main part of the diorama represents wetlands – deep and shallow – and the species that live there. The right side of the diorama with backdrop represents the upland parts of the Refuge and continuation of the Bear River towards the mountains.
- L. **Conservation Wall of Fame (People Make the Difference).** This exhibit highlights people and entities that have contributed to the conservation of native flora and fauna. It includes the Bear River Water Conservation Area, partners and individuals, especially individuals who engage in conservation practices at home. The story of the public helping to rebuild the Refuge after the floods in the early 1980s is a prominent story in this exhibit.
- M. **How are you connected to the Refuge?** This is a place for people, especially children, to post their thoughts on how they are connected to the Refuge. The design at the Kenai NWR, which has a similar exhibit, is a low slanted space for children to use as a writing surface. A series of strings with clips allows their parents to clip their answers for others to read. Staff review the responses and keep the ones that are appropriate.
- N. **What Are You Going to Do?** This is a series of exhibit components focusing on possible actions visitors can take at home within the context of their lifestyle to help conserve water and natural resources. Possibilities include the following:
  - **Who Do You Want to Invite Home?** This exhibit focuses on motivating people to plant native vegetation in their yards and other locations to attract specific native species. Since the goal is for visitors to plant native vegetation in their yards to help support native wildlife, the focus is on birds that are likely to use specific species of plants in an urban environment.

- **Pollinator Exhibit.** This would focus especially on pollinators that are responsible for common foods in the area and the potential crisis if those pollinators are eliminated due to loss of habitat.
- **Waterwise landscaping.** This focuses on using plants for landscaping that require very little water.
- **Why should you care?** This exhibit focuses on the value of nature in general and the Refuge specifically to the quality of life enjoyed by residents. It emphasizes that the U.S. Fish and Wildlife Service is a conservation minded agency, but the conservation of the natural world is still about benefiting the public and that it depends on the public taking actions. This is where additional conservation measures people can take would be included.

### **Future Exhibit Hall Experience: Summary of Strategies and Actions**

- Embed small panel at the beginning of the ramp focusing on the source of the wood.
- New exhibits for the exhibit hall.
- Remove storage area and move wall back in exhibit hall.

### **Visitor Center Other Public Areas: Future Experience**

Upon exiting the exhibit hall, visitors can take in any of the following:

- **Programs.** These programs, put on by staff, volunteers or partners, occur in the main auditorium and can cover a wide range of topics. All should be developed to communicate one or more of the Interpretive Messages.
- **Audiovisual Programs:** The theater provides several different videos for the visitor, one of which is the Video Tour of Bear River Migratory Bird Refuge, which provides a big picture overview of the key stories, and within that framework, communicates the Interpretive Messages. (This might be a good place to use the drone footage of the Bear River from its origin to the GSL.) In addition to the video about the Refuge and other videos already developed, another could be developed that presents the story of the early plight of the area due to loss of water and subsequent establishment and building of the Refuge, plus the story of rebuilding the Refuge after the floods in the early 1980s. The Duck Stamp Contest video could also be played. Finally, a video focused on human use of the area over time, including use by indigenous people, should be included. Development of this video would have to be in partnership with local indigenous people. Note that this should not be the only place indigenous people will be included. They need to be integrated into the rest of the interpretive opportunities as appropriate.
- **Contemplation Zone:** This is the area where visitors can sit and relax and simply contemplate what they have experienced in the exhibit hall and/or on the Refuge, or what they can see out the windows (back of the building). It could have spotting scopes, binoculars and bird books, and could also contain questions or quotes to stimulate thinking.
- **Changeable Exhibit Space:** This is a walk-in area off the main lobby where the airboat used to be located. It will now be a space for temporary displays, traveling exhibits, people to sit at a registration or event table to pass out information, or for other purposes. Examples of changing exhibits include:

- Junior Duck Stamp Contest entries/winners. This will be especially appropriate in September and October before the contest for the upcoming year as a means advertising the event and generating interest.
- Photo displays from a contest, or that represent species that can be seen in a particular season.
- Entries in an 'Art in the Refuge' context or session.
- Traveling exhibits from partner sites such as the Natural History Museum of Utah, Brigham City Art Museum, Tracy Aviary, Stokes Nature Center, Ogden Nature Center, Hogle Zoo, etc.
- An exhibit specifically for Swan Day.
- An exhibit specifically for Owl Day.
- An exhibit specifically for Eagle Day.

## On-Site Primary Experience: Area Behind Visitor Center

### Introduction

This includes the trail system and outdoor classroom and play area. It has two major access points – from the Visitor Center and via the trailhead in the parking area.

### Area Behind Visitor Center: Future Experience

Visitors who are in the building will probably exit onto the back balcony. Those with children can pick up a Jr. Ranger Backpack on their way out and will likely head to the outdoor classroom and play area, where interpretive information allows parents to interact with their children using the playing infrastructure as a key to asking questions related to the environment (such as 'what do you think might use a small waterway such as this?').

Many will head to the trail system, with most taking the short interpretive loop trail, where they encounter the following panels:

- **Trail orientation panel.** This would be located behind the Visitor Center at the beginning the trail near the junction of the trail and the ramp up to the deck of the building, and at trailhead at the parking area. All the signs are designed to stand alone, so this allows the trail to be used from either end.
- **This is a microcosm of the Refuge.** This focuses on the fact that the small wetland behind the Visitor Center and surrounding upland habitats is a microcosm of the actual Refuge. This is for people who may not visit when the building is open and might think that the Visitor Center and the area around it are all there is to the Refuge.
- **The importance of partnerships.** This is a 2- or 3-panel cluster located near the outdoor classroom and play area. It focuses on contributions made by people and other partners over the years, from the initial push by hunters to create the Refuge system, to the partnership that led to the play area. It emphasizes that anyone practicing water conservation, planting native plants for pollinators or wildlife, or recycling is essentially a partner with the U.S. Fish and Wildlife Service.
- **How to discover what you can't see.** This focuses on helping people identify the birds and wildlife living in the area without seeing them. For example, identifying birds by call or nests, identifying bird life and wildlife by tracks, etc.

- **Wetlands aren't always wet – The value of playas.** This panel, located so it focuses on the small playa east of the trail, focuses on the fact that wetlands are dry sometimes dry, and the importance of playas.
- **The value of wetlands.** This is similar to the current panel on the value of wetlands and is oriented towards the wetlands.
- **Water conservation is key.** This is similar to the current panel that exists along the trail about water being key to the survival of the flora and fauna of the Refuge, but the focus is shifted towards the fact that people and wildlife both need water, so in a semi-arid area with expanding human population, water conservation is key to survival of all biological organisms in the area, including humans.
- **The importance of 'edge.'** This focuses on the importance for some species of having two habitats close by – one that they feed in and one in which they might nest. A good location for this panel is where visitors are looking along the edge of the wetland so they can look up and see the edge between the wetlands and uplands.
- **The value of uplands.** This is located on the west side of the loop where a visitor is walking through uplands rather than along the wetlands. It focuses on the fact that healthy uplands make healthy wetlands, and also could touch on what lives there.
- **Invasives.** This is similar to the existing panel, with a focus on helping people find invasives that occur along the trails.
- **Human migration and bird migration.** This uses the nearby freeway as a focal point for drawing parallels between why people migrate, and birds migrate. A good location for this panel is along the west part of the inner loop, oriented so the wetlands are in the foreground, and the freeway is in the background.

### Area Behind Visitor Center: Summary of Strategies

- **Interpretive Panels along inner loop trail:** New panels that focus on using visible features to tell stories that communicate the messages.

## On-Site Primary Experience: Other Parts of the Refuge

### Introduction

This includes the access road and Yates parking lot, the area where the former Visitor Center was located and the Auto Tour.

### Other Parts of the Refuge: Future Experience

Prior to traveling the access road, visitors can pick up a Discovery Guide (part of the Jr. Ranger materials) and download the Audio Auto Tour Podcast and a translation if they want one. While in the car, children can use the Discovery Guide to find features (like a visual scavenger hunt) and read the associated stories when they spot one. Adults can listen to the podcast. Although it is 12 miles to the Auto Tour, confidence markers along the way will reassure them that they are headed in the right direction.

At the Yates parking lot, they encounter the following low-angled interpretive panels:

- **Panel 1:** This uses the visual of the shoreline on the Wasatch Front to focus on the slow decline in water level, from Lake Bonneville to the current Great Salt Lake.
- **Panel 2:** This focuses on the impact of overuse of Bear River in the early 20<sup>th</sup> century and subsequent drying out of the wetlands (similar to the panel currently in the existing kiosk).
- **Panel 3:** This focuses on the establishment of the Refuge and efforts to restore the wetlands.
- **Panel 4:** This focuses on the wetland enhancement project at this site and the importance of partnerships.

They also encounter a Trail Orientation Panel at the edge of the parking area and can take the trail to Bear River. There they will encounter the following interpretive panels, arranged in a cluster:

- **Panel 1:** This panel uses the river as the key visual to focus on the value of Bear River.
- **Panel 2:** This panel uses the water control structure to focus on the challenge of managing water at the Refuge.
- **Panel 3:** This is a Trail Orientation Panel with a 'You Are Here. (Only necessary if the trail extends from this point along the river.)

At the Outdoor Activity and Program Center they have access to covered picnic tables, a small Nature Play Space, the Bear River Interpretive Trail, and a trail to the observation tower. They can also attend programs, events and classes when offered. Possibilities include:

- Beginning birdwatching (Breakfast with the Birds)
- Wildlife photography
- Exploring the night sky
- Beginning kayaking
- Cook what you catch (fishing clinic and cooking class)
- A half-marathon (this would be the staging area and the route would be around the Auto Tour, or the route could be up and back on the access road)

The Bear River Interpretive Trail, which begins at the river, focuses on Bear River as the lifeblood of the region. Additional interpretive panels use features along the route to focus on the wildlife supported by water from Bear River, whether in the river itself, or in wetlands that are maintained by water from the river. Note that the trail extends along the levee to the east of the area. Finally, during heavy use periods, visitors have the opportunity to talk to staff, who will be located in a staffed trailer.

Visitors can also walk a different trail to the observation tower, where they will find a panoramic panel focusing on identifying the features in view (currently being developed) and an interpretive panel focusing on the water control structure and how water has to be managed to maintain the different habitats on the Refuge.

Visitors also have the option of taking the Auto Tour, where, in addition to the new signage being developed, a kiosk at the beginning of the loop (in the area of the maintenance shed) contains panels that provide message overview for the new signage along the route. In addition to the new panels, visitors continue to have the option of using the Discovery Guide and the Audio Auto Tour Podcast to get additional detail along the way.

## Other Parts of the Refuge: Summary of Strategies

- Remove kiosk and identification sign in Yates parking lot.
- Construct trail from Yates parking lot to Bear River (and possibly up or down the river)
- Remove kiosks along roadway.
- **Discovery Guide:** This publication, part of the Jr. Ranger materials, focuses on helping visitors connect with the Refuge by making them ‘Detectives of the Landscape.’ Clues addressing all senses help visitors discover evidence of the past, of the forces that shaped and continue to shape Bear River Migratory Bird Refuge, and of the flora and fauna that live here. This applies to the access road, Auto Tour, and the trails behind the Visitor Center.
- **Audio Auto Tour Podcast:** This is a series of podcasts or other type of audio programs that provide information while a person is driving the access road or the Auto Tour. It also uses key features to help tell stories that support the messaging.
- **Interpretive Panels at Yates parking lot:** These focus on the story of water, beginning with Lake Bonneville and ending with the wetland restoration project as a continuing effort to restore and conserve wetlands.
- **Interpretive panels at point where new trail from Yates parking lot intersects with Bear River.** These focus on the value of Bear River and on managing the water.
- **Confidence markers** along the access road.
- **An Outdoor Activity and Program Center with the following:**
  - **Covered picnic tables.** This includes at least two grouping of tables under one shelter to accommodate groups.
  - **Bear River Interpretive Trail.** This focuses on the importance of the Bear River to all life in the area, including humans.
  - **Interpretive panel about the water control structure.** This is located near the observation tower and should focus on communicating the primary message regarding the difficulty in managing the water in the Refuge.
  - **Small Nature Play Space.**
- **A new kiosk with message overview panels and Auto Tour Orientation Panel** at the beginning of the Auto Tour. (The latter has already been created but is located near the restrooms in the parking area associated with the former Visitor Center.)

## On-Site Experience: Departure

***Note:** This is the Departure Experience from the Visitor Center, which could be a precursor to visiting the Outdoor Activity and Program Center and/or the Auto Tour, or it could be departure from the Refuge. The Departure Experience from sites within the Refuge is simply a matter of turning around and following the access road out to the freeway.*

### Introduction

The Departure Experience from a facility typically involves a visit to the restrooms, gathering wayfinding information to other desired destinations in the area, getting answers to questions regarding other visitor experiences in the area and a visit to the store.



## **Departure: Future Experience**

The future experience is essentially the same, with a possible modification of what is sold in the nature store to facilitate desired visitor behaviors.

## **Post-Visit Experience: Return Travel**

### **Introduction**

A Return Travel Experience focuses on the part of the trip from when the visitor leaves the site to where they are comfortable knowing where they are going, which typically means getting back onto a major highway.

### **Return Travel: Future Experience**

No changes.

## **Post-Visit Experience: Post Trip**

### **Introduction**

Ideally, the U.S. Fish and Wildlife Service wants visitors to maintain an interest in the Refuge and to engage in Extended Experiences involving nature, the Refuge and the National Wildlife Refuge System, such as by participating in a future event or contest, researching additional information about nature, the Refuge and/or the Refuge system, and/or visiting a Refuge or similar sites near where they live, such as the Eccles Wildlife Education Center at Farmington Bay, the Ogden Nature Center and the Jordan River Nature Center.

### **Post-Trip: Future Experience**

Visitors can find out about what is going on at the Refuge by looking on the website for upcoming classes, programs, events and current information, getting a leaflet about events such as Swan Day and Owl Day, and getting information from mass media outlets. They can also get current information from the Facebook site where the Refuge posts information on events such as National Trails Day, issues (such as the phone lines being out), images and other information.

### **Post-Trip Experience: Summary of Strategies and Actions**

- Upgrade **Refuge Website**: This involves adding easily findable information about what people can do in the homes and lifestyles to help conserve wildlife and water, and to support the Refuge.



# Design Concepts

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## Introduction

Design concepts are not intended to be designs, or even rough designs. That would provide an obstacle to designers doing what they do best – design. The purpose of the design concepts is to help clarify the intent of a strategy and provide a starting place for developing designs.

## Strategies to Catch Attention

### Traditional Mass Media

#### Objectives

The specific objectives will vary depending on the information included.

#### Description and Concept

No specific design concepts are included because the context for which the information must be designed is often already determined (radio spots, television spots, newspaper articles). However, all of these strategies must focus on opportunities that would be of interest to urban residents rather than traditional users, and all must provide information on where a visitor can get additional information, such as the website, by telephone, etc. In addition, information should be presented in Spanish and English.

### Social Media

#### Objectives

At a minimum, after interacting with a social media site with information on the Refuge, potential visitors will:

- Be motivated to get additional information on the Refuge whether to satisfy curiosity, or preferably, to determine whether it is a place they want to visit.

**Note:** *Social media sites can do more than just motivate people to want more information, but in terms of its use at this stage of a visitor experience, it is to heighten interest in the Refuge to the point that people want more information.*

#### Description and Concept

This is not a site that is ‘designed.’ Rather it is one that is used or not. Of key importance when using most social media is to use it actively on a regular basis. Otherwise, people stop paying attention.

## Portable Exhibit

### Objectives

The specific objectives will depend on the focus of the exhibit.

### Messages

Messaging will depend on the focus of the exhibit.

### Description and Concept

This is a portable exhibit that could be either the tabletop variety or one that stands on the floor. The former is easier to transport, but with less available space. Although the floor model is more difficult to transport, lightweight versions still make transport relatively easy, and the added space provides more flexibility. The version recommended is a hook-and-loop (Velcro) system that can be set up easily and the components changed out quickly. Specific exhibit layouts should be designed, and all the necessary information, including images, handouts, brochure dispensers, etc., should be packaged together with instructions for assembly. Possible topics include:

- Water conservation in the home
- Planting a pollinator garden
- Attracting birds to your home
- Your Bear River Migratory Bird Refuge

## Strategies to Help People Plan a Visit

### Refuge Website

*Note: This site already exists. It is included because it is part of the information network necessary to support visitor interpretive experiences, and because it can be modified to work more effectively as a tool to facilitate visitation.*

### Objectives

Ideally, when people finish interacting with the information on this website, they will:

- Be motivated to learn more about the Refuge.
- Have the information necessary to plan a visit (they should be able to print off the Refuge Map/Brochure and the Jr. Ranger Booklet and download the Audio Auto Tour Podcast).
- Be aware of upcoming events.
- Be motivated to connect with the Refuge through social media platforms.
- Be aware that a Friends Group exists and know where to find out more information about the Friends Group.

### Messages

The Refuge Website should take the opportunity, if appropriate, to communicate all of the interpretive messages but at a minimum should communicate the following messages if it is to be effective as a marketing and trip planning tool:

**Interpretive Message 2:** Bear River Migratory Bird Refuge provides many benefits to you. (The focus for marketing a visit would be on the recreational, educational and interpretive opportunities, which ideally, will motivate them to gather the trip planning information they need.)

**Interpretive Message 1:** Nature is important to your quality of life.

**Sub-message 1-3:** Nature has always played and continues to play an important role in a healthy lifestyle for all cultural groups living in the area. (The focus would be on how nature contributes to a person's health as a means to motivate people to visit the Refuge.)

*Note: The website is also a vehicle for providing Extended Experiences after people have visited the Refuge. The messaging in those parts of the website should include all Interpretive Messages.*

### **Description and Concept**

The recent modifications have improved the site. However, additional changes would make it more effective. These include the following:

- Use more images of people recreating on *the Refuge* on the home page, and especially on the 'Visit Us' page. The latter does show people birdwatching who appear to be on a van tour, but no images of walking the trails behind the Visitor center, engaging in exhibits, attending an event or the myriad other visitor opportunities.
- Create a 'Visitor Activities' page with images of people engaging in activities, such as visiting the Visitor Center, walking the trails, stopping at an interpretive stop along the Auto Tour, etc.
- Use images of people recreating at all times of the year (possibly changing these on a seasonal basis).
- Use images to illustrate what to bring along with a description.
- Use images to illustrate hazards, along with supporting information, but without scaring people off.
- Provide an opportunity for visitors to print off the Refuge Map/Brochure and Discovery Guide, and to download the Audio Auto Tour Podcast and associated transcript.

## **Video Tour of Bear River Migratory Bird Refuge**

### **Objectives**

This video would be available on the website (or through a link to the Friend's website) and also for visitors to watch in the Visitor Center. Objectives depend on where it is viewed. If it is viewed off-site, after viewing the video potential visitors will:

- Want to know more about the Refuge and visitor opportunities.
- Want to plan a trip to the Refuge.
- Have a preliminary idea of places they want to go and activities they want to engage in.
- Know that they can go any time and have a good experience.
- Have an increased awareness of the importance of the Refuge in maintaining the Great Salt Lake ecosystem and in contributing to their quality of life.
- Be more motivated to support the Refuge.

If viewed on-site, after viewing the video, visitors will also:

- Feel inspired to view the exhibits and experience the outdoor exhibits at the Visitor Center.
- Be motivated to drive the Auto Tour.

## Messages

The video has the capability to communicate all the Interpretive Messages but at a minimum it should communicate the following to motivate people to visit:

**Interpretive Message 2:** Bear River Migratory Bird Refuge provides many benefits to you. (The focus for marketing a visit would be on the recreational, educational and interpretive opportunities, which ideally, will motivate them to gather the trip planning information they need.)

**Interpretive Message 1:** Nature is important to your quality of life.

**Sub-message 1-3:** Nature has always played and continues to play an important role in a healthy lifestyle for all cultural groups living in the area. (The focus would be on how nature contributes to a person's health as a means to motivate people to visit the Refuge.)

It should also communicate the following messages:

**Interpretive Message 4:** Everything in an ecosystem is linked and everything plays a part. Impact on one component has a ripple effect through the rest of the ecosystem.

**Interpretive Message 5:** Many people and organizations, including the U.S. Fish and Wildlife Service, are working to conserve and manage habitat to protect wildlife for people today and for future generations.

**Sub-message 5-1:** Bear River Migratory Bird Refuge is here because of people like you, including hunters, volunteers, the Friends Group, and others.

**Sub-message 5-2:** Because individual actions add up incrementally to significant impacts, you can play an important role in maintaining natural resources, and on conserving and recovering wildlife.

**Sub-message 5-3:** Humans can determine what organisms live and what die in the watershed by impact on habitat. Those impacts affect humans since humans are a part of the ecosystem.

**Sub-message 5-4:** The U.S. Fish and Wildlife Service manages the resources of the Refuge to benefit wildlife and the quality of your life.

**Interpretive Message 6:** Water conservation in the Great Salt Lake ecosystem is essential and Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

**Sub-message 6-1:** Residents of the Great Salt Lake (GSL) ecosystem depend on its health for their quality of life.

**Sub-message 6-2:** Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

## Description and Concept

The purposes of this strategy are twofold. The first is to motivate visitors to spend time at the Refuge while also sending messages. The second is to provide an in-depth experience of the Refuge for people not physically able to visit the Refuge.

One possible concept is to begin with footage from a drone that begins at the beginning of the Bear River and then tracks it to the Refuge. The video would then focus on the importance of the river for people, fish and wildlife who live along the way and also in maintaining the Great Salt Lake ecosystem (GSE) and how the GSE is critical to quality of life of residents in the area. Having set up the importance of Bear River, the video can now focus on the Refuge and the importance of the Refuge in conserving Bear River and maintaining/improving water quality while also supporting the myriad species of fish and

wildlife that use the Refuge. Given that this will be shown in the Visitor Center, it will be important within the context of the video to show visitors enjoying the recreational opportunities at the Refuge.

The video should be relatively short (6-8 minutes), to maximize the probability of keeping a visitor's interest and attention through the entire opportunity. Note that this is longer than a video that would be displayed in an exhibit space (which should be 2-3 minutes) but can be longer because it should be designed to be viewed when sitting down either at home or in the small theater.

## Strategies to Help People Travel

### Refuge Directional Signage

#### Location

At the intersection of West Forest Street and 2600 West.

#### Objectives

After encountering this strategy visitors will:

- Not be confused regarding directions to the Visitor Center if coming from Corinne, UT or Golden Spike Historic Park on 2600 West.

#### Description and Concept

The sign at the intersection with 2600 West is a simple directional sign that identifies the direction to the Visitor Center and Auto Tour instead of just the Auto Tour.

## Strategies to Enhance Arrival Experience

Most of the strategies to enhance the Arrival Experience are modifications to infrastructure. They include the following:

- Replacement of barbed wired as fence on either side of gate with fencing that is more attractive.
- Removal of birds on gate and fence.
- Addition of sculpture or piece of artwork located so it is the focal point as people enter.
- Improved maintenance to enhance the impression of the site as 'cared for.' At a minimum, this would be removal of grass growing in cracks on the sidewalks and parking areas and edging so vegetation is not growing over paved areas.
- Addition of a new boardwalk connecting the main access boardwalk to the trail at the back of the building. This not only provides quicker access to the Nature Play Space and restroom, but it also transforms the trail system into a nested network of loop trails, which are more attractive to visitors.

Note that the Refuge has recently replaced the kiosks outside the Visitor Center, which contains a dispenser for the Refuge Map/Brochure, an Area Orientation Panel, and interpretive panels that provide some degree of message overview.

Visitors also already have access to an information desk located in line-of-sight as they enter through the main entry.

The following are design concepts for additional information strategies to facilitate the visitor's arrival experience.

## Refuge Map/Brochure

**Note:** This strategy exists. It has been included to indicate it is an important part of the Information Network, and to provide recommendations for modifications before it is reprinted again.

### Objectives

After interacting with this opportunity visitors will:

- Have had most if not all their orientation and wayfinding questions answered, especially, "What is there to do here?" and "Where can I see birds (wildlife)?"
- Be excited about exploring the Refuge
- Feel comfortable in their ability to find their way around the area
- Have all the information they need for planning and having their desired experience
- Are aware that the Refuge offers programs and stages events, and that they can get a schedule in the visitor center or sign up to get notices on-line.

### Description and Concept

When this is ready for reprinting, the following modifications should be considered:

- Add a Refuge hashtag.
- In addition, a 'menu' of experiences based on time required should be included, along with suggestions about what a visitor should do if they have limited time.

## Directional Signage (Interior)

### Location

In lobby of Visitor Center at the intersection of the entry halls coming from the main entry and from the mobility accessible entry.

### Objectives

After interacting with this opportunity, visitors will:

- Know where the restrooms are located.
- Feel comfortable finding their way around the building.
- Be aware of the different public areas and opportunities.

### Description and Concept

One possible approach is to mimic a street sign, using small rectangular panels with the location and an arrow arranged around a vertical structure like a pole. The strategy provides direction to the restrooms,



the outdoor classroom and play area, the trails, the exhibit hall, the theater and the auditorium (the information desk is in line of sight and visitors will have passed by the nature store regardless of the entry hall they use). The vertical component would be suspended from the ceiling.

## Self-Serve Orientation Area

The self-serve orientation area allows visitors to get all the orientation and wayfinding information they need without having to go to the information desk. Availability of information in this area eases pressure on the information desk when the facility is crowded and serves visitors who prefer to gather information this way rather than engage in personal contact. All the information available at the information desk should be available here.

### Location

In lobby of Visitor Center.

### Objectives

After interacting with the opportunities in this area visitors will:

- Have had most if not all their orientation and wayfinding questions answered, especially, "What is there to do here?"
- Be excited about exploring the Visitor Center, the area around the Visitor Center and the rest of the Refuge.
- Have all the information they need for their desired experience (including a map).
- Know how to download and use the Audio Auto Tour Podcast (after it has been developed).
- Be aware that the Refuge offers programs and stages events (and have a copy of the event and program schedule), and that they can receive information on upcoming events and programs via email if they supply their email address.
- Be aware of the Jr. Ranger Program and have the materials if interested.

### Description and Concept

To function effectively, visitors entering the facility must be able to quickly identify the type of information offered at this station. One possibility is to use a large title and visual element, such as the question, "What is there to do here?" accompanied by a collage of people engaging in a variety of recreational opportunities on the Refuge.

Information available in the self-serve orientation area includes:

- The Refuge Map/Brochure.
- Jr. Ranger materials.
- Information on upcoming and regular events and programs.
- All publications associated with the Refuge (coloring books, etc.).
- Suggested itineraries based on time required.
- An optional sign-in book that can be used to market events and programs (if people leave their email addresses)

## Strategies to Enhance Visitor Center Interpretive Experience

The primary strategies to enhance the primary visitor interpretive experience in the Visitor Center are the exhibits in the exhibit hall. They focus on providing detailed message overview while motivating visitors to visit the actual Refuge. Figure 2 depicts the recommended sequence and location of exhibits. It is followed by the design concepts for each exhibit.

**Note:** *The approach for planning of this area was from the perspective of cost-effectiveness. Because the existing infrastructure worked for an effective flow of information and visitor experiences, the only recommended modification to infrastructure is to eliminate the storage area but keep a partition wall in its place.*

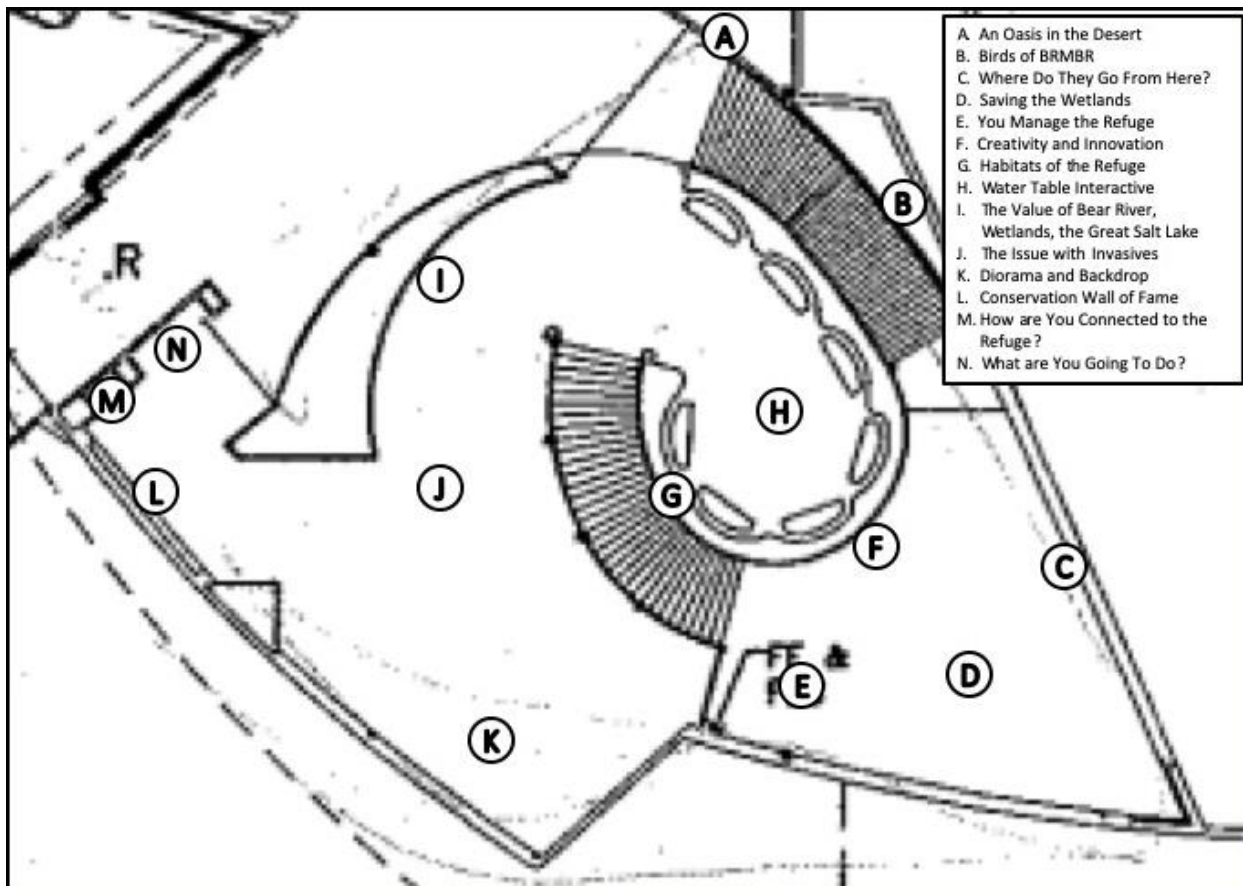


Figure 2: Layout of exhibits in exhibit hall

### A. Oasis in the Desert

#### Location

Exhibit hall. This should be the first exhibit encountered.

#### Objectives

After interacting with this opportunity, visitors will:

- Appreciate the importance of the Refuge in conserving migratory birds.

- Understand the need for a sequence of habitats in order to conserve migratory birds.

### Messages

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Sub-Message 3-1:** Conserving native flora and fauna that depend on Bear River Migratory Bird Refuge focuses on preserving and restoring the habitat they depend on for survival.

**Interpretive Message 5:** Many people and organizations, including the U.S. Fish and Wildlife Service, are working to conserve and manage habitat to protect wildlife for people today and for future generations.

### Description and Concept

This is the first part of a 3-part exhibit (Exhibits A, B and C) focusing on the journey of migratory birds and the importance of the Refuge. This first component has essentially the same focus as the 'Why Do Birds Come Here?' exhibit that currently occupies the same place. The difference is that it should flow into the 'Birds of the Refuge' exhibit.

One possible concept is to use a visual as if from a high altitude of the environment beginning at a point south of the Great Salt Lake (GSL) and continuing to north of the Refuge as a backdrop for other elements. The first part of the visual, depicting a dry landscape, provides a backdrop for images of migrating birds headed toward the Refuge. Supporting text focuses on their journey to this point and the need for water, food and a resting spot on their way to the Refuge after having crossed miles of dry ground. Ideally, other refuges should be highlighted along their route to the Refuge. The image then shifts to an enlarged image of the succession of habitats on the Refuge, with wetlands at the center, which provides the backdrop for the next exhibit.

## B. Birds of the Refuge

### Location

Along the walkway up toward the upper level. This should be the second exhibit in the sequence.

### Objectives

After interacting with this opportunity, visitors will:

- Know that the Refuge is used by an extensive and diverse array of wildlife.
- Be motivated to walk the trails and drive the Auto Tour in hopes of seeing some of the wildlife.
- Be aware that they are likely to find different birds and other wildlife in different habitats on the Refuge.

### Messages

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Sub-Message 3-1:** Conserving native flora and fauna that depend on Bear River Migratory Bird Refuge focuses on preserving and restoring the habitat they depend on for survival.

### **Description and Concept**

This second component is similar to the existing exhibit along the 'boardwalk' at the beginning of the exhibit hall, but the backdrop has been changed to represent all the different habitats in the Refuge. Birds that use the Refuge are located on the backdrop in the habitat they are most likely to be found. In addition, several species appear in a group and are highlighted in some way. These birds include avocets, white-faced ibis, tundra swan and other key species that depend on this specific Refuge for resting or nesting. The book that currently exists at the end of the exhibit with details on the birds remains at the end, but the birds are named in the actual image rather than forcing visitors to use the book to match the number with the bird. This exhibit component should be extended so it occupies up to half of the wall on the upper level. In addition, duplicates of birds should be eliminated. Finally, drawings of the birds should be considered rather than photographs, with perhaps an artistic mural depicting the wetlands and rest of the backdrop rather than aerial photos. The current set of photographs of birds do not have a consistent background.

## **C. Where Do They Go from Here?**

### **Location**

South wall on the upper level (this should appear to be a continuation of the 'Birds of the Refuge' exhibit).

### **Objectives**

After interacting with this opportunity, visitors will:

- Understand that a network of refuges that extends beyond the borders of the United States is necessary to conserve migratory bird populations.
- If from areas to the north, be interested in visiting other refuges along the route of the migratory birds that continue north.
- If from the south, be interested in visiting other refuges along the route of the migratory birds that come from the south.
- Understand the importance of international treaties and cooperation to maintain migratory bird populations.

### **Messages**

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Sub-message 3-1:** Conserving native flora and fauna that depend on Bear River Migratory Bird Refuge focuses on preserving and restoring the habitat they depend on for survival.

### Description and Concept

This is the final component of the 3-part introductory exhibit. It follows the journey of migratory birds who use the Refuge as a stopover for points north or points south on their return trip. The backdrop should depict the landscape from a high altitude similar to the first component, with the section north of the Refuge depicted as being very limited in terms of resting and watering areas to help emphasize the importance of the Refuge. Along the remainder of the route, other refuges should be highlighted, both those in the U.S. and in Canada, to provide a visual to support the point that a system of Refuges is needed to support migratory birds, and that international treaties are critical to provide migratory birds with necessary habitat along the entire course of their journey. Fish Springs National Wildlife Refuge could be one of those highlighted.

## D. Saving the Wetlands

### Location

On the upper level. Refer to figure 2 for the suggested location.

### Objectives

After interacting with this opportunity, visitors will:

- Be impressed by and appreciate the efforts of those people who worked to restore the wetlands and establish the Refuge in the early part of the 20<sup>th</sup> century.
- Understand the need to conserve water along Bear River in order to maintain the wetlands.

### Messages

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Interpretive Message 5:** Many people and organizations, including the U.S. Fish and Wildlife Service, are working to conserve and manage habitat to protect wildlife for people today and for future generations.

**Sub-Message 5-1:** Bear River Migratory Bird Refuge is here because of people like you, including hunters, volunteers, the Friends Group, and others.

**Sub-Message 5-2:** Because individual actions add up incrementally to significant impacts, you can play an important role in maintaining natural resources, and on conserving and recovering wildlife.

**Sub-Message 5-3:** Humans can determine what organisms live and what die in the watershed by impact on habitat. Those impacts affect humans since humans are a part of the ecosystem.

**Sub-Message 5-4:** The U.S. Fish and Wildlife Service manages the resources of the Refuge to benefit wildlife and the quality of your life.

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Sub-Message 3-1:** Conserving native flora and fauna that depend on Bear River Migratory Bird Refuge focuses on preserving and restoring the habitat they depend on for survival.

**Interpretive Message 4:** Everything in an ecosystem is linked and everything plays a part. Impact on one component has a ripple effect through the rest of the ecosystem.

If the design can include negative impacts on the residents of the area due to the lack of water from the Bear River flowing into the Great Salt Lake, the following messages can also be communicated:

**Interpretive Message 6:** Water conservation in the Great Salt Lake (GSL) ecosystem is essential and Bear River Migratory Bird Refuge is essential to the health of the GSL ecosystem.

**Sub-Message 6-1:** Residents of the GSL ecosystem depend on its health for their quality of life.

**Sub-Message 6-2:** Bear River Migratory Bird Refuge is essential to the health of the GSL ecosystem.

### Description and Concept

This exhibit uses images to explain why and how the Refuge was constructed. The images should include those of a dying marsh with dried up wetlands and dead birds as a starting point for telling the story of restoring the marsh. To the extent possible, the impact or potential impact to the GSL and the residents who depend on it of the marsh drying up at that point in time should be included. The underlying point is that this area is critical habitat for migrating waterfowl, and that Bear River is important to the health of the GSL and the people who lived around it and needed to be reclaimed after issues with overuse of Bear River. This exhibit also includes a component entitled 'Rebuilding the Refuge.' It documents the floods that damaged the Refuge in the 1980s and the first Visitor Center, and the subsequent rebuilding of the Refuge with the Visitor Center close to the freeway rather than at the beginning of the Auto Tour.

The exhibit should not give the impression that all is now well – support is still needed. For that reason, the final component of the exhibit should focus on what the Refuge needs from people today and in the future to continue to be effective.

## E. You Manage the Refuge

### Location

On the upper level. Refer to figure 2 for the suggested location.

### Objectives

After interacting with this opportunity, visitors will:

- Know the Refuge is managed for wildlife first, but ultimately for people.
- Know that managing the Refuge for both wildlife and recreation is difficult.
- Be impressed with and appreciative of the staff regarding their ability to manage for wildlife and recreation.
- Understand and be more supportive of management decisions regarding closing areas for wildlife.
- Understand why management decisions can change from year to year.
- Have increased appreciation for the role of the Refuge in their quality of life (for residents).
- Understand why wetlands have to be drained periodically.

### Messages

Depending on how the interpretive opportunity is designed, it could help communicate all of the Interpretive Messages. However, the following are the messages that it should communicate:

**Interpretive Message 2:** Bear River Migratory Bird Refuge provides many benefits to you.

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Sub-Message 3-1:** Conserving native flora and fauna that depend on Bear River Migratory Bird Refuge focuses on preserving and restoring the habitat they depend on for survival.

**Interpretive Message 4:** Everything in an ecosystem is linked and everything plays a part. Impact on one component has a ripple effect through the rest of the ecosystem.

**Interpretive Message 6:** Water conservation in the Great Salt Lake ecosystem is essential and Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

**Sub-Message 6-1:** Residents of the Great Salt Lake ecosystem depend on its health for their quality of life.

**Sub-Message 6-2:** Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

**Interpretive Message 7:** Managing the Bear River Migratory Bird Refuge for wildlife habitat while supporting public use and maintaining flow of the Bear River to feed the Great Salt Lake ecosystem is a complex and everchanging challenge.

**Sub-Message 7-1:** The U.S. Fish and Wildlife Service uses science and understanding of natural processes to help meet the challenge of managing for wildlife and people.

**Sub-Message 7-2:** Resource management changes in response to enhanced understanding of birds and other wildlife, natural processes and changing human-caused impacts on the natural resources.

### **Description and Concept**

This is a game in which participants try to manage the Refuge under different water conditions, which requires moving water around to accommodate different species during low water. This can be a non-computerized exhibit where visitors are given a set of conditions and a number of management options on flip plates. Under each flip plate are the consequences of their choices in terms of species that benefitted, species that suffered, recreationists who were pleased, recreationists who were upset, etc. The point is that managing the Refuge is difficult. A computerized version would be more effective and more attractive if visitors are given a challenge regarding balancing benefits between different species, which is a priority over recreation, and providing as many nature-based recreation opportunities as possible under the circumstances. One option in the game allows the participant to use up the flow of Bear River. The consequence focuses on the impacts over time to the GSL and the people who live there, which mimics the fate of Owen's Lake in California and possibly the Aral Sea. Note that a computerized version would have multiple stations so several people could engage in this exhibit at the same time. In addition, the game would have a series of challenges, each taking a very short amount of time. That creates a higher probability of a high rate of turnover at this exhibit, which allows more visitors to engage with it.

## **F. Creativity and Innovation – Keys to Effective Management**

### **Location**

On the upper level. Refer to figure 2 for the suggested location.

## Objectives

After interacting with this opportunity, visitors will:

- Be more aware of and impressed by the fact that the U.S. Fish and Wildlife Service is constantly evolving, trying new techniques, inventing new techniques, etc. to manage Refuges.

## Messages

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Interpretive Message 4:** Everything in an ecosystem is linked and everything plays a part. Impact on one component has a ripple effect through the rest of the ecosystem.

**Interpretive Message 7:** Managing the Bear River Migratory Bird Refuge for wildlife habitat while supporting public use and maintaining flow of the Bear River to feed the GSL ecosystem is a complex and everchanging challenge.

**Sub-Message 7-1:** The U.S Fish and Wildlife Service uses science and understanding of natural processes to help meet the challenge of managing for wildlife and people.

**Sub-Message 7-2:** Resource management changes in response to enhanced understanding of birds and other wildlife, natural processes and changing human-caused impacts on the natural resources.

## Description and Concept

This exhibit uses an air boat as a starting point for focusing on the need for an innovative approach to managing wetlands, which resulted in a modification of the air boat that was originally developed in Florida. Additional innovative and creative approaches over the years should also be included. This exhibit is located along the back wall of the upper level, with a different air boat than the one on display so visitors can get into the boat and perhaps have their picture taken. One component is a glassed over portion of the floor where people can look down beneath the boat and see how shallow the water is. This visual could be an underwater diorama with legs and bills of birds feeding, stalks of wetland plants, etc. Note that taxidermy mounts should not be used for this or any of the exhibits.

## G. Habitats of the Refuge

### Location

Along the walkway from the upper level down to the main exhibit area. Refer to figure 2 for the suggested location.

### Objectives

After interacting with this opportunity, visitors will:

- Understand that different habitats support different species.
- Understand and appreciate the connections between habitats and the need to manage upland habitat to maintain wetland, riparian and aquatic habitats.
- Want to go out on the grounds or to the Refuge to hear bird calls.



## Messages

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Sub-Message 3-1:** Conserving native flora and fauna that depend on Bear River Migratory Bird Refuge focuses on preserving and restoring the habitat they depend on for survival.

**Interpretive Message 4:** Everything in an ecosystem is linked and everything plays a part. Impact on one component has a ripple effect through the rest of the ecosystem.

## Description and Concept

This set of exhibit components, corresponding to different habitats on the Refuge, are arranged in sequence from the driest upland habitat at the top to the wetland exhibits on the main floor. It is important that the habitats be presented as a continuum to emphasize that they are interconnected, and that what happens in one habitat can cause impact in other habitats.

One possible approach is to create a long continuous exhibit along the rail with reveals that focus on connections between the different habitats. It should be low angled to allow people to easily read it and reach the reveals. The calls of birds associated with specific habitats are associated with the habitat being represented. This is similar to the existing bird calls in the tall cylinders along the walkway, but the calls are now of birds associated with the habitats being displayed and they are located with their associated exhibit. Note that the bird calls should be changed to reflect what can be found in different seasons. Note also that directional speakers should be used to avoid sound overload in the exhibit area.

## H. Water Table Interactive

### Location

On the main floor of the exhibit hall. See figure 2 for recommended location.

### Objectives

After interacting with this opportunity, visitors will:

- Know the Refuge is managed for wildlife first, but ultimately for people.
- Know that managing the Refuge for both wildlife and recreation is difficult.
- Be impressed with and appreciative of the staff regarding their ability to manage for wildlife and recreation.
- Understand and be more supportive of management decisions regarding closing areas for wildlife.
- Understand why management decisions can change from year to year.
- Have increased appreciation for the role of the Refuge in their quality of life (for residents).

### Messages

Depending on how the interpretive opportunity is designed, it could communicate all of the messages. However, the following are the messages that it should communicate at a minimum:

**Interpretive Message 2:** Bear River Migratory Bird Refuge provides many benefits to you.

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Sub-Message 3-1:** Conserving native flora and fauna that depend on Bear River Migratory Bird Refuge focuses on preserving and restoring the habitat they depend on for survival.

**Interpretive Message 4:** Everything in an ecosystem is linked and everything plays a part. Impact on one component has a ripple effect through the rest of the ecosystem.

**Interpretive Message 6:** Water conservation in the Great Salt Lake ecosystem is essential and Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

**Sub-Message 6-1:** Residents of the Great Salt Lake ecosystem depend on its health for their quality of life.

**Sub-Message 6-2:** Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

**Interpretive Message 7:** Managing the Bear River Migratory Bird Refuge for wildlife habitat while supporting public use and maintaining flow of the Bear River to feed the Great Salt Lake ecosystem is a complex and everchanging challenge.

### **Description and Concept**

This exhibit offers a hands-on opportunity for young visitors, while providing an opportunity for the parents to be facilitators of an interpretive experience. It can also be used for Environmental Education programs. The table depicts wetlands in the Refuge – some deeper and some shallower. The water table is designed to allow users to change flow of water in a ‘landscape’ to inundate or drain different areas of the Refuge, and to manipulate the water flow, and perhaps the landscape, in other ways. Parents are provided information in a written format that allows them to talk to their children about the impacts of different ‘management’ decisions regarding flow of water. (This is a similar experience to ‘You Manage the Refuge,’ but it is designed for families with young children.) Panels around the outside of the area provide visuals depicting the consequences of different management decisions, providing parents with an alternative source of information. For example, one panel would ask the question at the top, ‘What if we used all the water to fill the deep wetlands?’ The graphic would depict deeper wetlands with the species that thrive in such habitat and shallower wetlands dried up with the species that need that habitat flying away. Text would explain the consequences. The text would be brief, such as simply being ‘didjacks.’ In between the panels are benches for parents to sit. Another bench is located where the cylindrical exhibit on wetlands now sits.

**Note:** *The rock structures currently holding panels and the cylindrical exhibit on wetlands have been removed.*

## **I. The Value of Bear River, Wetlands and the Great Salt Lake**

### **Location**

On the main floor of the exhibit hall. See figure 2 for recommended location.

## Objectives

After interacting with this opportunity, visitors will:

- Understand that the Refuge supports the quality of life of residents.
- Be more supportive of the U.S. Fish and Wildlife Service in managing the Refuge for wildlife while also managing for people to the extent possible.

## Messages

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Interpretive Message 1:** Nature is important to your quality of life.

**Sub-Message 1-1:** Pollinators critical for pollinating local crops, and consequently, the agriculture industry, depend on native habitat to survive.

**Sub-Message 1-2:** Nature provides recreational opportunities that are part of the quality of life for many residents.

**Sub-Message 1-3:** Nature has always played and continues to play an important role in a healthy lifestyle for all cultural groups living in the area.

**Sub-Message 1-4:** Nature helps maintain the way of life of residents

**Interpretive Message 2:** Bear River Migratory Bird Refuge provides many benefits to you.

## Description and Concept

This is located on the wall where the 'Value of Wetlands' exhibit is currently located. The wall has been pushed back (the storage area is eliminated or reduced) to provide more room, and wall is now separated into 3 concave sections (scallops). The first one contains an exhibit component focusing on the value of Bear River, the second on the value of wetlands, and the third on the value of the Great Salt Lake. 'Value' is in terms of what the target audience considers value. Although there are 3 separate exhibit components, it should be clear that they are connected, so impacts upriver are felt downriver.

## J. The Issue with Invasives

### Location

On the main floor of the exhibit hall. See figure 2 for recommended location.

### Objectives

After interacting with this opportunity, visitors will:

- Understand why invasives are an issue, and consequently, understand and support management efforts to control invasives such as phragmites.
- Take actions to eliminate invasives, such as not planting them in landscaping, using boot brushes, washing boats, etc.

### Messages

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Sub-Message 3-1:** Conserving native flora and fauna that depend on Bear River Migratory Bird Refuge focuses on preserving and restoring the habitat they depend on for survival.

**Interpretive Message 4:** Everything in an ecosystem is linked and everything plays a part. Impact on one component has a ripple effect through the rest of the ecosystem.

**Interpretive Message 5:** Many people and organizations, including the U.S. Fish and Wildlife Service, are working to conserve and manage habitat to protect wildlife for people today and for future generations.

**Sub-Message 5-2:** Because individual actions add up incrementally to significant impacts, you can play an important role in maintaining natural resources, and on conserving and recovering wildlife.

**Sub-Message 5-3:** Humans can determine what organisms live and what die in the watershed by impact on habitat. Those impacts affect humans since humans are a part of the ecosystem.

**Interpretive Message 7:** Managing the Bear River Migratory Bird Refuge for wildlife habitat while supporting public use and maintaining flow of the Bear River to feed the Great Salt Lake ecosystem is a complex and everchanging challenge.

### **Description and Concept**

This exhibit will be located where the current cylindrical exhibit focusing on food webs in the ecosystem is located. That exhibit is being eliminated. The new exhibit on invasives focuses on the negative impacts of invasives on the native flora and fauna and consequently, on the value of the Refuge from the perspective of the target audiences. In other words, we want people to understand that invasives threaten their quality of life as they define it. One possible approach is to depict different landscapes without and with invasives and the consequent impact on species or opportunities that audiences value.

## **K. Diorama and backdrop from GSL to Wasatch Front + Bear River**

### **Location**

On the main floor of the exhibit hall. See figure 2 for recommended location.

### **Objectives**

After interacting with this opportunity, visitors will:

- Be aware of the need to manage upstream parts of Bear River to help maintain the water quality in the Refuge and in the GSL.
- Support management actions that focus on working with the Bear River Conservation Area to influence actions in the areas of the GSL ecosystem upstream of the Refuge.

### **Messages**

This exhibit could be designed to communicate all of the Interpretive Messages. It should include the following at a minimum:

**Interpretive Message 1:** Nature is important to your quality of life.

**Sub-message 1-1:** Pollinators critical for pollinating local crops, and consequently, the agriculture industry, depend on native habitat to survive.

**Sub-message 1-2:** Nature provides recreational opportunities that are part of the quality of life for many residents.

**Sub-message 1-3:** Nature has always played and continues to play an important role in a healthy lifestyle for all cultural groups living in the area.

**Sub-message 1-4:** Nature helps maintain the way of life of residents.

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Sub-message 3-1:** Conserving native flora and fauna that depend on Bear River Migratory Bird Refuge focuses on preserving and restoring the habitat they depend on for survival.

**Interpretive Message 4:** Everything in an ecosystem is linked and everything plays a part. Impact on one component has a ripple effect through the rest of the ecosystem.

**Interpretive Message 6:** Water conservation in the Great Salt Lake ecosystem is essential and Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

**Sub-message 6-1:** Residents of the Great Salt Lake (GSL) ecosystem depend on its health for their quality of life.

**Sub-message 6-2:** Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

### **Description and Concept**

This exhibit provides the opportunity to highlight Bear River as the key to the health of the Refuge, to the health of the GSL, and therefore, to the quality of life enjoyed by those in the area. It also provides the opportunity to highlight the different habitats and different species that use those habitats, along the continuum from the GSL to the mountains.

One possible approach is to use a continuous diorama and associated visual on the wall to represent the habitats of the GSL ecosystem from the GSL on the far left to the uplands. The left section would represent the GSL, the main part of the diorama would represent wetlands – deep and shallow – and the species that live there, and the right side of the diorama with backdrop represents the upland parts of the Refuge and continuation of the Bear River towards the mountains. Text and graphics in every section focus on the connection between the health of that part of the ecosystem and quality of life of residents. The bird calls of species that occur in each habitat could be included. This exhibit should be interactive, using reveals and touchable elements to engage visitors.

## **L. Conservation Wall of Fame (People Make the Difference)**

### **Location**

On the main floor of the exhibit hall. See figure 2 for recommended location.

### **Objectives**

After interacting with this opportunity, visitors will:

- Appreciate all the people and organizations who have taken actions to help conserve wildlife.
- Make changes in lifestyle that support conservation of water in particular, but also support wildlife.
- Join an organization that focuses at least in part on conserving nature.

## Messages

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Interpretive Message 5:** Many people and organizations, including the U.S. Fish and Wildlife Service, are working to conserve and manage habitat to protect wildlife for people today and for future generations.

**Sub-Message 5-1:** Bear River Migratory Bird Refuge is here because of people like you, including hunters, volunteers, the Friends Group, and others.

**Sub-Message 5-2:** Because individual actions add up incrementally to significant impacts, you can play an important role in maintaining natural resources, and on conserving and recovering wildlife.

**Sub-Message 5-3:** Humans can determine what organisms live and what die in the watershed by impact on habitat. Those impacts affect humans since humans are a part of the ecosystem.

**Sub-Message 5-4:** The U.S. Fish and Wildlife Service manages the resources of the Refuge to benefit wildlife and the quality of your life.

## Description and Concept

The point of the exhibit is to highlight people and entities that have contributed to the conservation of native flora and fauna. It is important in this exhibit to highlight individuals who belong to Priority Audiences, and to honor people who engage in conservation practices at home, especially those who are not often honored for contributions, which includes most minorities. This could include posting images of bird feeding stations, pollinator gardens, Citizen Science projects, etc. It should also include the Partners of the Refuge (Partners Program), the BRWCA and other entities that should be recognized for their efforts. The story of the public helping to rebuild the Refuge after the floods in the early 1980s should be a prominent story in this exhibit.

One part of the exhibit is a small door with the question on the outside, 'Who is the next Conservation Hero?' or something catchier. Upon opening the door, visitors see their reflection in a mirror. Supporting text focuses on the fact that it is people who make a difference and that small changes by a lot of people add up to a big difference. One possible component is short audio or video oral histories with people from the area talking about what they did and how it benefits them.

## M. How are you connected to Refuge?

### Location

On the main floor of the exhibit hall. See figure 2 for recommended location.

### Objectives

After interacting with this opportunity, visitors will:

- Know that the Refuge affects their quality of life.
- Be motivated to take action to conserve natural resources.

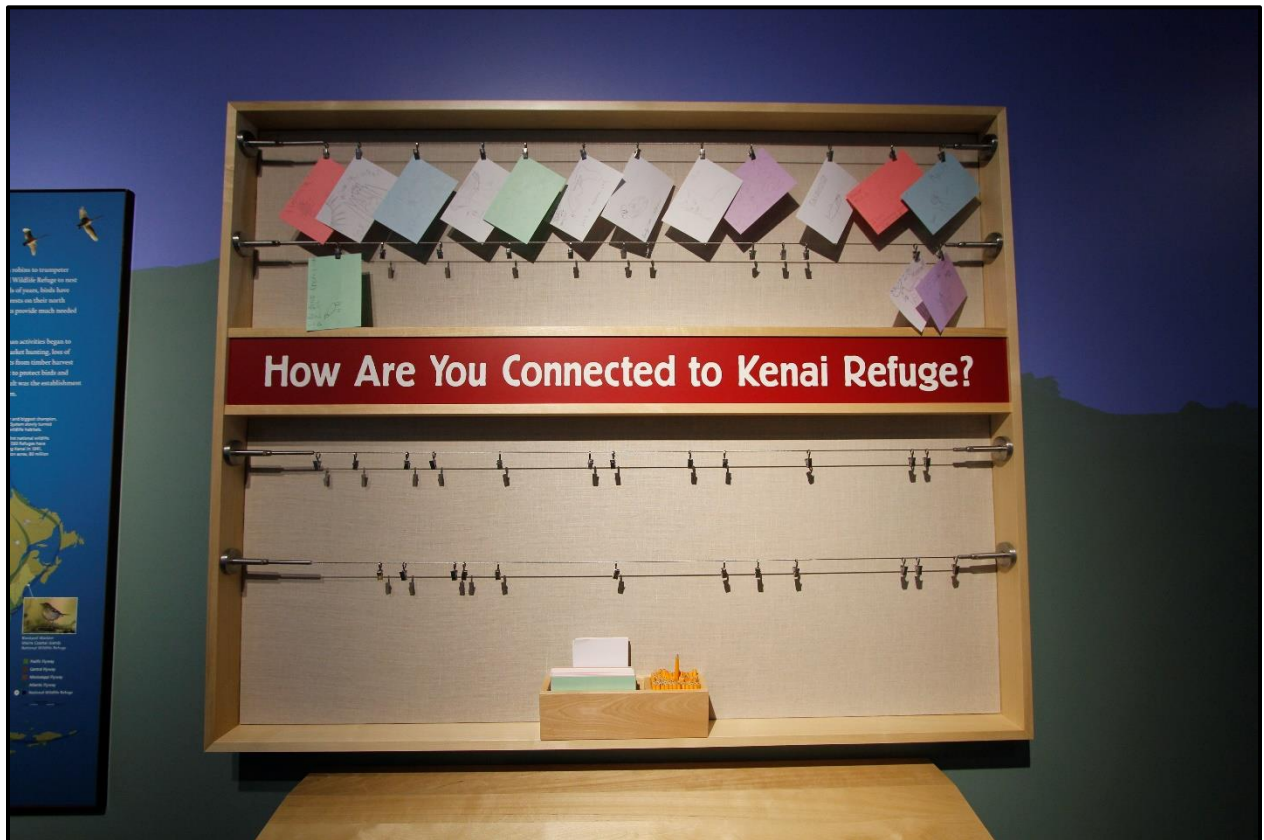
## Messages

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Interpretive Message 2:** Bear River Migratory Bird Refuge provides many benefits to you.

## Description and Concept

This is a place for people to post their thoughts. The design at the Kenai NWR (see image below), which has a similar exhibit, is a low slanted space for children to use as a writing surface. A series of strings with clips allows their parents to clip their answers for others to read. Staff review the responses and keep the ones that are appropriate.



## N. What Are You Going to Do?

### Location

On the main floor of the exhibit hall. See figure 2 for recommended location.

### Objectives

After interacting with this opportunity, visitors will:

- Make changes in lifestyle that support conservation of water in particular, but also support wildlife.

- Join an organization that focuses at least in part on conserving nature.

### Messages

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Sub-Message 5-2:** Because individual actions add up incrementally to significant impacts, you can play an important role in maintaining natural resources, and on conserving and recovering wildlife.

### Description and Concept

This is a series of exhibit components focusing on possible actions visitors can take at home within the context of their lifestyle to help conserve water and to conserve natural resources. Possibilities include the following:

- **Who Do You Want to Invite Home?** This exhibit offers the opportunity to see and hear birds at the same time, with the hope that people will become enamored with a specific species and will want to plant native vegetation in their yards to attract that species. It could also motivate visitors to engage in projects that involve planting native vegetation in other locations. Since the goal is for visitors to plant native vegetation in their yards to help support native wildlife, the focus should be on birds that are likely to use specific species of plants in an urban environment.
- **Pollinator Exhibit.** This would focus especially on pollinators that are responsible for common foods in the area and the potential crisis if those pollinators are eliminated due to loss of habitat. Accompanying this exhibit should be instructions and supplies for planting a pollinator garden. (Pollinator garden kits should be sold in the nature store to facilitate the desired behavior.)
- **Waterwise landscaping.** This focuses on using plants for landscaping that require very little water.
- **Why should you care?** This exhibit focuses on the value of nature in general and the Refuge specifically to the quality of life enjoyed by residents. It emphasizes that the U.S. Fish and Wildlife Service is a conservation minded agency, but the conservation of the natural world is still about benefiting the public and that it depends on the public taking actions. This is where additional conservation measures people can take would be included.

## Strategies to Enhance Experience Behind Visitor Center

### Interpretive Trail Panels

***Note:** The interpretive trail already has signage, some of which was put in recently. Consequently, these are recommendations for when the signs are replaced. Because they will be replaced sometime in the future, the design concepts have been left somewhat vague to allow for modifications needed due to changes in conditions and what has already been implemented from the plan, such as a new boardwalk.*

### Location

Inner loop trail in rear of Visitor Center.



## Objectives

After finishing interacting with this exhibit, visitors will:

- Be inspired to learn more about the Refuge and the wildlife that use it.
- Be motivated to visit the main Refuge.
- Be motivated to return and see what is in the Visitor Center (for visitors who come when the building is closed).

## Messages

Most of the Interpretive Messages can be communicated in this experience. However, the following are messages that should be communicated at a minimum:

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Sub-message 3-1:** Conserving native flora and fauna that depend on Bear River Migratory Bird Refuge focuses on preserving and restoring the habitat they depend on for survival.

**Interpretive Message 4:** Everything in an ecosystem is linked and everything plays a part. Impact on one component has a ripple effect through the rest of the ecosystem.

**Interpretive Message 5:** Many people and organizations, including the U.S. Fish and Wildlife Service, are working to conserve and manage habitat to protect wildlife for people today and for future generations.

**Sub-message 5-1:** Bear River Migratory Bird Refuge is here because of people like you, including hunters, volunteers, the Friends Group, and others.

**Sub-message 5-2:** Because individual actions add up incrementally to significant impacts, you can play an important role in maintaining natural resources, and on conserving and recovering wildlife.

**Sub-message 5-3:** Humans can determine what organisms live and what die in the watershed by impact on habitat. Those impacts affect humans since humans are a part of the ecosystem.

**Sub-message 5-4:** The U.S. Fish and Wildlife Service manages the resources of the Refuge to benefit wildlife and the quality of your life.

**Interpretive Message 6:** Water conservation in the Great Salt Lake ecosystem is essential and Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

**Sub-message 6-1:** Residents of the Great Salt Lake (GSL) ecosystem depend on its health for their quality of life.

**Sub-message 6-2:** Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

## Design Concept

The following are the suggested stops, key features visible, the focus of the interpretation and information that should be included.

- **Trail orientation panels.** This would be located at the beginning the trail near the junction of the trail and the ramp up to the deck of the Visitor Center and at trailhead at the parking area. It would show the trail system and contain information on length, time necessary to walk the trails, and the trails that are fully accessible. Hazards – both biological and weather related – should also be included.

- **This is a microcosm of the Refuge.** This focuses on the fact that the small wetland behind the Visitor Center and surrounding upland habitats is a microcosm of the actual Refuge. This is for people who may not visit when the building is open and might not visit the Auto Tour. It is important because some visitors think that the Visitor Center and the area around it are all there is to the Refuge. This panel should include a map of the entire Refuge with images of people enjoying recreational activities (to motivate people to visit the actual Refuge).
- **The importance of partnerships.** This should be located near the outdoor classroom and play area because it is the most visible example of what partnerships can accomplish. It could include a mention of the initial push by hunters to create the Refuge system, and also partnerships that are occurring now. One possibility is to emphasize that anyone practicing water conservation, planting native plants for pollinators or wildlife, or recycling is essentially a partner with the U.S. Fish and Wildlife Service. Note that this would be better as a 2-panel or 3-panel cluster rather than a single sign if those additional topics are included.
- **How to discover what you can't see.** This focuses on helping people identify the birds and wildlife living in the area without seeing them. For example, identifying birds by call or nests, identifying bird life and wildlife by tracks, etc. Note that this panel must be developed based on what can be seen or heard at the time it is being developed. However, visuals are critical.
- **Wetlands aren't always wet – the value of playas.** This panel, located so it focuses on the small playa east of the trail, focuses on the fact that wetlands sometimes are dry, and the importance of playas. (Understanding the value of playas will be relevant to people who drive the access road to the Auto Tour.) A possible approach to this panel is to use side by side images of the playa with water and with avocets and other shorebirds using it, and when it is dry.
- **The value of wetlands.** This is similar to the current panel on the value of wetlands and is oriented towards the wetlands. One possible concept is to use the visual in front of the visitor as a backdrop for identifying species of birds and wildlife that use this habitat, along with images of what wetlands do to soak up floods (perhaps not an issue in this area) and clean up water.
- **Water conservation is key.** This is similar to the current panel that exists along the trail about water being key to the survival of the flora and fauna of the Refuge, but the focus is shifted towards the fact that people and wildlife both need water, so in a semi-arid area with expanding human population, water conservation is key to survival of all biological organisms in the area, including humans. One possible approach is to use a graphic to indicate the amount of freshwater needed by humans over time, perhaps including the depth wells need to be dug now versus a century ago to access fresh water.
- **The importance of 'edge.'** This focuses on the importance for some species of having two habitats close by – one that they feed in and one in which they might nest. A good location for this panel is where visitors are looking along the edge of the wetland so they can look up and see the edge between the wetlands and uplands. One possible approach is to use species who use the wetlands and associated uplands, and that visitors have a chance of seeing or hearing, as focal points for presenting this concept.
- **The value of uplands.** This is located on the west side of the loop where a visitor is walking through uplands rather than along the wetlands. It focuses on the fact that healthy uplands make healthy wetlands, and also could touch on what lives there. One possible approach is to use an illustration of what the visitor can see from this point – uplands connected to wetlands – as a backdrop for highlighting actions in the uplands that affect the habitat quality in the wetlands. Both positive and negative impacts should be highlighted, with the former being actions people can take in their own lifestyles to help protect wetlands by minimizing negative impacts on uplands.

- **Invasives.** This is similar to the existing panel, with a focus on helping people find invasives that occur along the trails. An ideal species to highlight is phragmites because it is so visible in many parts of the Refuge. The focus would be on the negative impacts of phragmites on native flora and fauna, and ultimately, to impacts on human quality of life. The latter is important. The more that impacts to the natural resources can be connected to something people value, the more likely they are to support measures to conserve. It is important in this panel, as in every other panel, if possible, is to highlight changes in lifestyle that minimize negative impacts on the natural resources or changes that maximize positive impacts.
- **Human migration and bird migration.** This uses the nearby freeway as a focal point for drawing parallels between why people migrate, and why birds migrate. A good location for this panel is along the west part of the inner loop, oriented so the wetlands are in the foreground, and the freeway is in the background. The issue here is to separate out the fact that wildlife migrate because they cannot survive otherwise while humans migrate because they want to. With that in mind, the focus can be more on the need for ‘rest stops’ along the migration pathway.

## Strategies to Enhance Interpretive Experience Elsewhere on the Refuge

### Discovery Guide (part of Jr. Ranger materials)

#### Objectives

After interacting with this opportunity visitors will:

- Have experienced key features of the Refuge using all their senses.
- Have visited the Refuge and Auto Tour (because a lot of the ‘things’ to discover will be along that road).

#### Messages

All Interpretive Messages should be communicated in this publication, if possible, but the emphasis would be on the following:

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Sub-Message 3-1:** Conserving native flora and fauna that depend on Bear River Migratory Bird Refuge focuses on preserving and restoring the habitat they depend on for survival.

**Interpretive Message 4:** Everything in an ecosystem is linked. Impact on one component has a ripple effect through the rest of the ecosystem.

#### Description and Concept

This publication focuses on helping visitors connect with natural and the cultural history of the Refuge by making them ‘Detectives of the Landscape.’ Clues addressing all senses help visitors discover

evidence of the past, of the forces that shaped and continue to shape the Refuge and of the flora and fauna that live there.

The actual device can be anything easily carried and used as an identification guide and check-off list, such as a booklet or set of cards with pictures on a ring. Whatever is used, it should contain descriptions and images of features to look for and check off. Each item has two columns to check – one for experiencing the feature in an exhibit, learning about it in a program, or learning about it on a sign, and one for experiencing the actual feature. For example, if the user learned how to identify a specific bird in the Visitor Center and then found one while exploring the Refuge, he or she could put a mark in each column. Experiences should involve all senses, such as smelling bark, hearing a bird call, identifying a tree by the feel of the bark, etc.

## Audio Auto Tour Podcast

### Objectives

Since this is a digital version of the Discovery Guide, the objectives will be the same.

### Messages

All Interpretive Messages should be communicated in this opportunity if possible.

### Description and Concept

This is essentially a digital version of the Discovery Guide. Although this will include the same stops as on the access road and Auto Tour, the podcast provides an opportunity to provide more detail. Podcasts can be designed in any number of ways, but the key is to make sure that the visitor can access information quickly that is relevant to their particular location and experience. The other key aspect for this application is that visitors can download the information, so they do not have to depend on Wi-Fi access when on the Refuge.

Ideally, visitors will be able to use the podcast to access detailed information as follow up to any topic or concept introduced on interpretive signs or other interpretive opportunities along the access road and on the Refuge. In addition, it will have 'chapters' for the specific trails, like chapters in a book.

***Note:** Although podcasts can cost a significant amount of money to develop, they are currently a strategy that appeals to younger generations, primarily Millennials and more recent generations, important audiences.*

## Interpretive Panels: Yates parking lot

### Location

Yates parking lot, oriented towards the Wasatch Front.

### Objectives

After finishing interacting with this exhibit, visitors will:

- Be inspired to learn more about the prehistoric history of the area regarding water.

- Understand that the Great Salt Lake is a remnant of a much larger lake, which is why it is so salty.
- Understand and be motivated to support the need for conservation of remaining wetlands and water resources, including the Bear River.

### Messages

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Sub-Message 3-1:** Conserving native flora and fauna that depend on Bear River Migratory Bird Refuge focuses on preserving and restoring the habitat they depend on for survival.

**Interpretive Message 6:** Water conservation in the Great Salt Lake ecosystem is essential and Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

**Sub-Message 6-1:** Residents of the Great Salt Lake ecosystem depend on its health for their quality of life.

**Sub-Message 6-2:** Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

**Interpretive Message 7:** Managing the Bear River Migratory Bird Refuge for wildlife habitat while supporting public use and maintaining flow of the Bear River to feed the Great Salt Lake ecosystem is a complex and everchanging challenge.

**Sub-Message 7-2:** Resource management changes in response to enhanced understanding of birds and other wildlife, natural processes and changing human-caused impacts on the natural resources.

### Design Concept

These panels focus on the story of water, beginning with Lake Bonneville and ending with the wetland restoration project as a continuing effort to restore and conserve wetlands. This is probably a 3-panel cluster. The following is a possible approach to each panel.

#### **Panel 1: Lake Bonneville to the Great Salt Lake**

This panel starts by drawing attention to the visible shoreline of Lake Bonneville as a starting point for introducing the fact that since that time the water level has continued to drop, with the Great Salt Lake being a remnant of Lake Bonneville. Because there are no outlets to the Great Salt Lake, it has gotten more and more salty as the water level has gone down.

#### **Panel 2: Impact of EuroAmerican settlement**

This focuses on the impact of early EuroAmericans drawing water out of Bear River to irrigate crops, with the eventual result being drying up of the wetlands that birds depended on, and negative impacts on water quality of the Great Salt Lake. This panel should touch on restoration of the wetlands, with the associated message that the conserving water is still critical.

#### **Panel 3: Water Conservation is the Key**

This focuses briefly on the construction of the Refuge and work on conserving water in Bear River but must include the growing need for freshwater due to increasing population and the needs of

waterfowl and other wildlife, and the measures needed to conserve freshwater. It should include what visitors can do to support the effort through changes in lifestyle.

### **Interpretive Panels: Intersection of trail from Yates parking lot and Bear River**

*Note: These should only be installed when the trail from the parking lot is improved, and the trail shows significant use.*

#### **Location**

Intersection of trail from Yates parking lot and Bear River

#### **Objectives**

After finishing interacting with this exhibit, visitors will:

- Understand the importance of Bear River to the health of the area and the wildlife and people that live here.
- Understand and be motivated to support the need for conservation of fresh water.

#### **Messages**

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Interpretive Message 5:** Many people and organizations, including the U.S. Fish and Wildlife Service, are working to conserve and manage habitat to protect wildlife for people today and for future generations.

**Sub-Message 5-1:** Bear River Migratory Bird Refuge is here because of people like you, including hunters, volunteers, the Friends Group, and others.

**Sub-Message 5-2:** Because individual actions add up incrementally to significant impacts, you can play an important role in maintaining natural resources, and on conserving and recovering wildlife.

**Sub-Message 5-3:** Humans can determine what organisms live and what die in the watershed by impact on habitat. Those impacts affect humans since humans are a part of the ecosystem.

**Sub-Message 5-4:** The U.S. Fish And Wildlife Service manages the resources of the Refuge to benefit wildlife and the quality of your life.

**Interpretive Message 6:** Water conservation in the Great Salt Lake ecosystem is essential and Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

**Sub-Message 6-1:** Residents of the Great Salt Lake ecosystem depend on its health for their quality of life.

**Sub-Message 6-2:** Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

**Interpretive Message 7:** Managing the Bear River Migratory Bird Refuge for wildlife habitat while supporting public use and maintaining flow of the Bear River to feed the Great Salt Lake ecosystem is a complex challenge.

### Description and Concept

These panels focus on the value of Bear River and on the issues of managing the water. Given that Bear River and a water control structure are the most prominent visuals, the following are suggested panels:

#### **Bear River as the Life Blood of the Region**

This panel focuses on the importance of Bear River to both humans and wildlife. One possible concept is to use a graphic that depicts Bear River as a backdrop for small graphics arranged along its length depicting the different uses of the river. Supporting text focuses on the farmer and ranchers who use the water upstream, the fish and wildlife (and the duck hunting and angling they support) that depend on Bear River in the Refuge area, and how the Bear River affects the water quality in the Great Salt Lake and the fish, wildlife and human activities that depend on water quality.

#### **Conservation and Management are Key**

This panel using the water control structure to focus on the importance of managing Bear River to maximize the positive impacts and minimize negative impacts downstream. It should highlight the extensive series of water control structures on the panel to emphasize the complexity of managing the water to maximize use.

### **Bear River Interpretive Trail**

***Note:** The interpretive focus depends on the location of the trail because it determines the visuals available for telling stories. At this point the trail does not exist, but the preliminary recommendation is to use the raised roadway west of the parking area as the primary location for part of the trail with the other part of the loop on the riverbank. Because the trail has not yet been located, the design concepts for the associated interpretive panels focuses more on the intent of the panels rather than providing detail on focal points and storylines.*

#### **Location**

Extending to the west of the Outdoor Activity and Program Center.

#### **Objectives**

After finishing interacting with this exhibit, visitors will:

- Understand the importance of Bear River to the health of the area.
- Understand and be motivated to support the need for conservation of fresh water.
- Be aware that different wildlife need different habitats to survive.
- Understand that concept of 'edge' and its importance to many species of wildlife.

#### **Messages**

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Sub-Message 3-1:** Conserving native flora and fauna that depend on Bear River Migratory Bird Refuge focuses on preserving and restoring the habitat they depend on for survival.

**Interpretive Message 4:** Everything in an ecosystem is linked and everything plays a part. Impact on one component has a ripple effect through the rest of the ecosystem.

**Interpretive Message 6:** Water conservation in the Great Salt Lake ecosystem is essential and Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

**Sub-Message 6-1:** Residents of the Great Salt Lake ecosystem depend on its health for their quality of life.

**Sub-Message 6-2:** Bear River Migratory Bird Refuge is essential to the health of the Great Salt Lake ecosystem.

**Interpretive Message 7:** Managing the Bear River Migratory Bird Refuge for wildlife habitat while supporting public use and maintaining flow of the Bear River to feed the Great Salt Lake ecosystem is a complex challenge.

### **Description and Concept**

The panels along the route could include any or all of the following:

#### **What is Bear River to You?**

This panel focuses on how the Bear River benefits humans directly (water for irrigation, recreational opportunities, etc.) and indirectly through impacts on the Great Salt Lake.

#### **The Value of Riparian Areas**

This panel focuses on the fact that myriad birds and wildlife depend on riparian areas and that they are also important for shading the river and helping control water temperatures.

#### **Healthy Uplands lead to Healthy Rivers**

This panel focuses on the fact that what happens in uplands has impacts – positive and negative – on Bear River.

#### **The Connections**

This is a series of panels that focus on the links between birds and wildlife in the area and specific species of plants. This should include panels highlighting species that depend on a combination of the upland habitat, riparian habitat and aquatic habitat, and also species that depend on ecological ‘edges’ between habitats.

#### **People Make the Difference**

This panel focuses on the role of people in conserving Bear River, from large organizations such as the U.S. Fish and Wildlife Service and the Bear River Conservation Area, to individuals who simply make changes in lifestyles.

## **Interpretive Panel: Water Control Structure**

### **Location**

Near the observation tower.



## Objectives

After finishing interacting with this exhibit, visitors will:

- Appreciate the difficulty in managing the water at the Refuge.
- Appreciate the efforts of the U.S. Fish and Wildlife Service to manage for both people and wildlife.

## Messages

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Interpretive Message 7:** Managing the Bear River Migratory Bird Refuge for wildlife habitat while supporting public use and maintaining flow of the Bear River to feed the Great Salt Lake ecosystem is a complex challenge.

**Sub-Message 7-1:** The U.S. Fish and Wildlife Service uses science and understanding of natural processes to help meet the challenge of managing for wildlife and people.

**Sub-Message 7-2:** Resource management changes in response to enhanced understanding of birds and other wildlife, natural processes and changing human-caused impacts on the natural resources.

## Description and Concept

This panel is located so the focus is on the dam (water control structure) at this location. It uses the feature to focus on the network of water control structures on the Refuge and why they are all needed. One possible approach is to highlight several different scenarios and the adjustments to the water control structures necessary to manage water under those different conditions. The focal point should always be the change in how the dam is managed under a specific set of conditions.

## Auto Tour Welcome Kiosk and Panels

**Note:** *New interpretive panels were recently installed along the Auto Tour. In addition, the Audio Auto Tour Podcast and Discovery Tour will both provide additional detail on the stories along the route. Consequently, the only additional strategy recommended is to build a new kiosk and put the Auto Tour Orientation Panel, Message Overview Panels and a brochure dispenser on the kiosk.*

**Note:** *The new Auto Tour Orientation Panel recently developed and scheduled to be located on the kiosk in the parking area near the restrooms will be moved to this location.*

## Location

In the large space just across the bridge, adjacent to the maintenance shop.

## Objectives

After finishing interacting with the panels on the kiosk, visitors will:

- Be aware of the time required to drive the Auto Tour.
- Be aware of the array of habitats and possible species they might see along the route.
- Understand that they are likely to see different species at different times of the year.
- Understand that they are likely to see different species in different habitats.

- Be motivated to drive the Auto Tour.

## Messages

The following are the messages to focus on in designing the exhibit, but that does not mean other messages and sub-messages cannot be included:

**Interpretive Message 3:** Plants, fish, and wildlife (including pollinators) depend on their specific habitat to survive.

**Sub-Message 3-1:** Conserving native flora and fauna that depend on Bear River Migratory Bird Refuge focuses on preserving and restoring the habitat they depend on for survival.

**Interpretive Message 4:** Everything in an ecosystem is linked and everything plays a part. Impact on one component has a ripple effect through the rest of the ecosystem.

**Interpretive Message 7:** Managing the Bear River Migratory Bird Refuge for wildlife habitat while supporting public use and maintaining flow of the Bear River to feed the Great Salt Lake ecosystem is a complex challenge.

**Sub-Message 7-1:** The U.S. Fish and Wildlife Service uses science and understanding of natural processes to help meet the challenge of managing for wildlife and people.

**Sub-Message 7-2:** Resource management changes in response to enhanced understanding of birds and other wildlife, natural processes and changing human-caused impacts on the natural resources.

## Design Concept

The following is the design concept for the Message Overview panels.

### What Occurs Where?

One possible approach is to develop a stylized oblique aerial perspective of the Auto Tour as a backdrop to highlight different species that can be seen in different habitats. Images of the species would be accompanied by brief text focusing on why that specific habitat is important.

### What Occurs When?

One possible approach to this panel is to use a panel divided into 4 sections representing each of the seasons. Species likely to be found in each season would be highlighted. For migratory species, information would include where they are coming from and/or where they are going.

### It Wasn't Always This Way

This panel uses images of dried wetlands with dead waterfowl as a starting point for focusing on the time period when the wetlands almost disappeared and how they were recovered through the efforts of the U.S. Fish and Wildlife Service and a large array of other organization and individuals.

### What's Next?

This panel emphasizes that the effort to conserve the Bear River and the fish and wildlife that depend on it is ongoing and becoming more difficult as human populations expand, that the key is water conservation, and that everyone plays a role in conserving water. It should highlight what people can do in their lifestyles to conserve water.

# Cost Range Estimates

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## Introduction

The following are Cost Range Estimates for the interpretive strategies recommended in this plan. Modification of or building of infrastructure are not included because they are quite difficult to estimate without a more detailed design on which to base the estimate.

Estimates were supplied by Exhibit Concepts, Inc., 700 Crossroads Court, Vandalia, OH, 45377. When ready to implement any strategy, we recommend calling them at 1-800-324-5063 to update the estimates.

***Note:** The Cost Range Estimates try to cover the middle range of costs. In almost all cases you can pay more or less for the strategy in question.*

## Cost Range Estimates

Strategy	Cost Range	Comments
Website modification	See Comment	Assume this will be done in-house.
Video Tour of Bear River Migratory Bird Refuge	\$7200-\$9600	Video cost estimated at \$1200/finished minute. This assumes a 6–8-minute video.
Portable Exhibit	\$500-\$1200 for the display board	Images, brochure holders, and other materials not included.
Refuge Map/Brochure	See comment	The Refuge already handles reprinting of brochures. Publications too difficult to determine cost range estimates because of significant variability due to size, color, pages, binding, number ordered, etc.
Visitor Center Exhibits	See comment	Exhibit Concepts Inc. (ECI) uses a formula based on square footage of the exhibit space and on complexity of exhibits. The square footage of the exhibit space is not known. From a complexity standpoint, ECI estimates most of the exhibits to fall in the \$300-\$350 per square foot range, with a few (diorama, digital interactive) falling in the \$450-\$550 range. Final cost range estimate will depend on the square footage of exhibit space after the storage closet is removed and which exhibits the Refuge selects to be included in the facility.
Interpretive Trail Panels	\$42,000-\$63,000	Assumes 14 panels.
Discovery Guide	See Comment	Publications too difficult to determine cost range estimates because of significant variability due to size, color, pages, binding, number ordered, etc.

Audio Auto Tour Podcast	\$8000- \$12,000 per chapter	Podcasts can be produced relatively inexpensively. This assumes the work, including the scripting, is contracted out.
Yates parking lot Interpretive Panels	\$9000- \$13,500	Assumes 3 panels.
Yates parking lot Interpretive Trail Panels	\$9000- \$13,500	Assumes 3 panels.
Bear River Interpretive Trail Panels	\$27,000 - \$40,500	Assumes 9 panels
Water Control Structure Interpretive Panel	\$3000-\$4500	Assumes it is mounted on a post. If mounted on an existing structure (kiosk) the cost is \$2250-\$3750.
Information Kiosk	\$4000-\$8000	Depends on design and materials used (metal versus wood).
Message Overview Panels	\$6500- \$11,000	Assumes 3 panels mounted on the kiosk.

# Action Plan

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## Introduction

The Action Plan is based on the following guidelines:

- Safety first.
- Orientation and wayfinding before Interpretation.
- Barriers to a good visitor experience before interpretation.
- Message overview before interpretive detail.
- 'Low hanging fruit' as soon as possible (helps build momentum).
- Opportunities nearer areas of visitor concentration before ones in more remote areas (reach more people = bigger bang for the buck).
- Build around what is already in place.

The Action Plan does not include all of the actions related to infrastructure modification that should happen during this time period; only the ones that have significant impact on the visitor experiences. The priority for actions noted can shift based on factors that cannot fully be accounted for, such as available money, increase or decrease in staffing, and other factors.

The Action Plan also does not include updating the Refuge Map/Brochure. We assume that update will occur when it is time to reprint the brochure.

## Phase 1

The focus for the initial phase is on elements of the plan that create a safer experience (both perceived and actual), components that improve wayfinding and orientation, and relatively simple actions that significantly improve the visitor interpretive experience. It also includes the start-up phases for projects that take more time and/or resources. Those actions are as follows:

- Begin the process of working with the Department of Transportation to replace the directional sign at 2600 West.
- Modify the website as recommended to the extent possible.
- Explore opportunities to increase the number of partners who can take on staging an event or program.
- Develop the Portable Exhibit.
- Stage at least one event at the Outdoor Program and Activity Center (the basic infrastructure for staging events and putting on programs is already there). (Although planning the Outdoor Activity and Program Center is likely to take some time, the CCP should be completed before that planning is begun).
- Upgrade the area in front of the Visitor Center by taking the actions noted in the Arrival Experience.
- Put in the new directional signage that visitors can see as they enter the Visitor Center.
- Put the word 'Welcome' in multiple languages on the wall in the Visitor Center.
- Develop the Discovery Guide component of the Jr. Ranger Program.
- Begin the process of designing the new boardwalk.
- Begin the process of applying for funding to replace the exhibits in the Visitor Center.

- Develop the interpretive materials for the outdoor classroom and play area.
- Put in the interpretive sign cluster at the outdoor classroom and play area.
- Remove the existing kiosks along the access road.
- Establish an array of existing videos that can be shown in the theater (you may already have these).

**Note:** *The Visitor Interpretive Experience Plan should be reviewed and updated, if necessary, at the end of Phase 1, particularly if a lot of time has passed.*

## Phase 2

The focus of Phase 1 is to address issues that affected the basic visitor experience, such as orientation and wayfinding strategies, and to begin the process on projects that require a long lead time. The next phase is on upgrading the interpretive experience to the extent possible, beginning with message overview. The following should be part of Phase 2:

- Create the Video Tour of the Bear River Migratory Bird Refuge (between showing it at the Visitor Center and having it available on the website, the video can reach a lot of people).
- Build the kiosk and install the Message Overview Panels at the entrance to the Auto Tour. Move the Auto Tour Orientation Panel to this kiosk.
- Develop the interpretive panels for the Yates parking area.
- Take out the airboat exhibit and create a multipurpose space in its place. (Do this in Phase 1 if possible so you have more flexibility for temporary displays associated with events or programs.)
- Develop the Outdoor Program and Activity Center so it is more functional. This does not necessarily include putting in the Bear River Interpretive Trail or the Nature Play Space. It probably means putting in picnic tables and any other infrastructure to facilitate its use for programs and events.
- Schedule more program and events at the Outdoor Program and Activity Center.
- Put in the confidence markers along the access road.

**Note:** *The Visitor Interpretive Experience Plan should be reviewed and updated, if necessary, at the end of Phase 2, particularly if a lot of time has passed.*

## Phase 3

Phase 3 focuses on expanding the Interpretive Network to create the opportunities that provide detail, and those that cost a lot of money. This phase is likely to take years to complete. It should include the following:

- Develop the Audio Auto Tour Podcast.
- Put in the new boardwalk (as soon as funding and permitting allow).
- Replace the exhibits in the Visitor Center, including creating the impression of birds flying as visitors enter the building.
- Replace the panels for the interpretive trail behind the building.
- Put in the Nature Play Space at the Outdoor Program and Activity Center.
- Build the Bear River Interpretive Trail.