

Kootenai NWR Thematic Matrix



NATIONAL
WILDLIFE
REFUGE SYSTEM

Created by Riley Vance
Interpretive Research Fellow
National Wildlife Refuge System – Visitor Services | Summer 2025

Welcome to the Interpretive Thematic Matrix for Kootenai National Wildlife Refuge!

The purpose of this matrix is to connect resource management efforts to resource education efforts on National Wildlife Refuges. This process was developed by the Albuquerque Regional Office for the U.S. Fish & Wildlife Service (USFWS). The first matrices were piloted at several different national wildlife refuges within New Mexico, Arizona, Oklahoma, and Texas. This matrix, along with two others at Little Pend Oreille and Turnbull National Wildlife Refuges, represent the first to be created in the Pacific Region, which includes Washington, Oregon, Idaho, and the Pacific islands.

The Interpretive Thematic Matrix (ITM) serves as a guide for refuge managers and visitor services staff to guide decision making and available resources for community engagement and refuge programming. With a matrix in place, the refuge can create and share content that directly connects refuge management efforts to the public and in a relevant, understandable, and compelling way. Matrices can be used to create new environmental education or interpretive programming, help orient volunteers, emphasize focuses for contractors on exhibits or signage, to leverage resources or capacity, and more.

The Interpretive Thematic Matrices feature themes from subject matters and management efforts with the U.S. Fish & Wildlife Service. Each matrix contains several components including: interpretive themes, supporting concepts and ideas, tangibles, intangibles, and universals concepts. The sister agency of the USFWS, the National Park Service, states that interpretive themes "encourage exploration...[They] go beyond a mere description...to foster multiple opportunities to experience and consider the [refuge] and its resources. These themes help explain why a [refuge] story is relevant to people." Through these efforts, USFWS hopes to improve the quality of visitor services within each refuge to change public perception and increase support and share that refuges are where both wildlife and people may thrive.

From Denali National Park and Preserve Education Plan: A Long Range Vision for Education and Interpretation, 2010.

Denali National Park and Preserve
Interpretive Theme Matrix

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Subject Matter and Interpretive Theme Statement	Concepts and Ideas	Tangibles: Topics and Stories+	Intangibles and Universals
<p>1. Extensive Natural Ecosystem</p> <p>Denali's intact, natural ecosystem embodies a wisdom from which humans can learn and promote the workings of a healthy planet for a sustainable future.</p>	<p>Some examples of concepts and ideas to be included in the themes: (Some of these concepts may potentially develop or combine into specific programs and interpretive media themes.)</p> <ul style="list-style-type: none"> An ecosystem consists of living and non-living components and elements seen and unseen. Complete understanding of such a complex system is impossible. Unaltered ecosystems can serve as baselines to understand ecosystems that have been impacted. Unaltered ecosystems provide excellent opportunities for research and learning. The ambitious vision of ANILCA was to surpass previous conservation efforts by setting aside vast areas that could protect large undisturbed and intact ecosystems. Conserving large protected areas requires recognizing that local people are part of the ecosystem and accommodating some level of human consumptive use of resources. Intact ecosystems are rare because human activity has eliminated species, altered habitat, and fundamentally changed natural relationships on much of Earth's surface. The Denali ecosystem is dependent upon the global ecosystem and vulnerable to changes that originate beyond the park's borders. Denali's ecosystem is recognized to be of international significance. (Biosphere Reserve) 	<p>Some examples representing the types of stories that could be told under this theme:</p> <ul style="list-style-type: none"> Species specific stories Species interactions Illustrations of complexity Short-term and long-term change Wildland values Role of science in preserving parks Role of science in helping us understand the world at large Human interaction with landscapes Opportunity for hands-on discovery Natural cycles Exotic species Nexus of biological and physical worlds 	<p>Some examples of deeper meanings of topics:</p> <p>Intangibles: Ecosystem Biodiversity Complexity Preservation Rare Sustainability Knowledge Conservation Heritage</p> <p>Universals: Protection Wonder Humility Mystery Curiosity Survival Wisdom Health</p>

* These topics are representative, a partial list. They are not intended to be all-inclusive (in fact they could never be) nor are they intended to exclude any topic.

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Example of an interpretive matrix at Denali
National Park and Preserve
Image courtesy of the National Park Service

Matrix Terms & Definitions

The following are the interpretation elements used in the Interpretive Thematic Matrix, as well as their definitions.

Interpretive Theme: The interpretive theme states the reasons why a person should care about/for a resource.



Supporting Ideas: The supporting ideas provide key information, facts, or definitions that support the theme.



Matrix Terms & Definitions

Tangible: A tangible is anything a visitor can see, hear, taste, touch, or smell, such as a model or live animal.



Intangible: An intangible is an abstract concept, such as feelings or beliefs.



Matrix Terms & Definitions

Universal: Universals are abstract concepts that everyone can relate to, but everyone sees differently, such as family or beauty.



Target Audience: The suggested, specific audience that could be reached by the interpretive theme.



The People Behind the Matrix

Without the support and assistance of the FWS employees detailed below, the Interpretive Thematic Matrix for Kootenai National Wildlife Refuge would not have been possible.

Riley Vance, Primary Author
Interpretive Research Fellow
Inland Northwest National Wildlife Refuge Complex

Emily DeLanzo, Visitor Services, Cultural Resources,
and Planning Chief
National Wildlife Refuge System Region 2

Joshua Contois, Visitor Services Manager
Inland Northwest National Wildlife Refuge Complex

Trinity Joshua, Directorate Fellowship Program
National Wildlife Refuge System Region 2

Shannon Ehlers, Refuge Manager
Kootenai National Wildlife Refuge

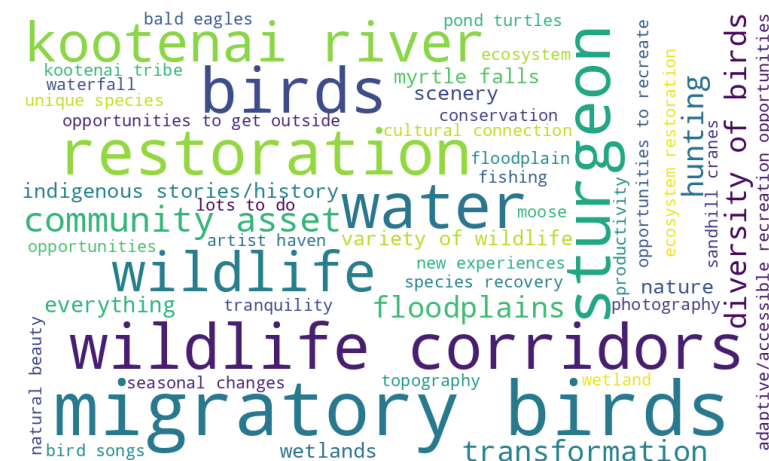
**We'd like to thank you all for your hard work and participation.
We could not have done this without you: thank you!**

The Process to Develop the Matrix

The information in this matrix was gathered during a 1-month residency by the interpretive research fellow (IRF) at Kootenai NWR. During this time, a virtual scoping session with FWS staff took place. Primary subject matter was populated during a brainstorming exercise, represented by a word cloud (seen on right). The IRF also conducted informal scoping of the Friends of Kootenai and members of the public.

From this sessions, the IRF identified 5 primary subjects to focus on for the matrix. These primary subject matters became the basis for every theme. The IRF then worked independently to create the theme statement for every subject matter as well as identifying and forming supportive ideas for each theme statement. Weekly progress meetings between the IRF and the Visitor Services Manager helped to focus and refine the document.

The themes and full list of supporting ideas, and concepts created are stored on a separate Microsoft Word document, “Kootenai NWR Expanded Matrix – Messages and Themes.” This is intended to be a living document – revised regularly as planning, policy, regulation, or other priorities are updated.



ABOVE: Screenshot of Brainstorming Word Cloud with Kootenai Staff

BELOW: Example pages from Kootenai Messages and Themes

Subject Matter: Community Asset

Primary Theme: Kootenai National Wildlife Refuge is a place where nature and people come together, enriching the community as a space for exploration, creativity, learning, recreation, and shared stewardship.

Supporting Concepts and Ideas

Directly from slides:

- o The Refuge offers access to a variety of recreational activities, including wildlife observation, photography, waterfowl hunting, fishing, big game hunting, upland game hunting, and hiking.
- o Recreational opportunities continue through winter, with snowshoeing and cross-country skiing on the Auto Tour Route and snowshoeing deep creek or old humplack trails.
- o Living abundant nature and near green spaces offers physical and mental health benefits.
- o The Refuge offers a scenic backdrop for the growing community of artists in Butters Ferry.
- o The environmental education bar can be used as a community gathering space for natural resource-related topics, free of charge.
- o The Refuge offers 3 ADA blinds for waterfowl and 1 ADA blind for white tail deer.
- o There is no fee to visit the Refuge.

Additional Supporting Information

- Recreation opportunities continue through winter, with snowshoeing and **cross-country skiing** on the autumn or snowshoeing deep creek and old lampback trails.
- The Refuge offers 3 ADA blinds for waterfowl and 1 ADA blind for white tail deer. Accessible trails are included Chikadee Trail, the first portion of Myrtle Falls Trail. The Aurora route is an enjoyable walking way to see the refuge.
- Use of green spaces is associated with decreased health problems, improved blood pressure and cholesterol levels, reduced stress, and improved general health perceptions, and contributes to better mental health conditions. (NAPA)
- **Kootenai National Wildlife Refuge** Provides High Quality Nature
 - "High quality" natural spaces are better for us and our wellbeing. Quality can mean higher biodiversity (a wide variety of plants and wildlife). Specific characteristics of nature are particularly important in rural or urban spaces.
 - We should include the amount of green space in our communities. The variety of

Subject Matter: Water

Primary Theme: Water is the lifeblood of Kootenai National Wildlife Refuge. The variety of waterways found on the refuge sustain diverse life and enrich the community through ecological, cultural, and recreational value.

Supporting Ideas & Concepts

Directly from slides:

- o The water on this land serves a crucial purpose for migratory birds and wildlife.
- o Wetlands function as "nutrient pumps," with backflows that return water and nutrients to the river, enriching ecosystems downstream.
- o Prominent water features include Myrtle Falls, the Kootenai River, Deep Creek, Myrtle Creek, Cascade Creek and many wetland ponds throughout the Refuge.
- o The waterways of Kootenai NWR offer incredible bird viewing opportunities.
- o Water-based recreation on the Refuge includes waterfowl hunting and fishing.
- o Unique and prominent water-based wildlife include river otters, beavers, waterfowl, native fish, freshwater mussels, and more.
- o Sturgeon and bull trout are protected species that are significant to the area.
- o Many types of life depend on the Refuge and prospect rely on these waterways, such as the little brown bat and the Yuma bat.

Notes from interview with Shannon Ehlers below:

- [illegible]

Additional Supporting Information



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Theme: At Kootenai National Wildlife Refuge, restoration is an ongoing effort to rebuild healthy, resilient habitats for wildlife and people—shaped and inspired by the past, while focused on the future.

Supporting Ideas and Concepts:

- During pre-settlement times, the floodplain of the lower Kootenai River valley included approximately 70,000 acres of wetlands, wet meadows, and floodplain forest.
- Beginning in 1921, 47 miles of the Kootenai River, and many of its tributaries, were diked. This separated the river and its tributaries from their natural floodplains. By 1947, virtually all of the available floodplain had been converted to agriculture. 95 percent of the valley’s historic wetlands had been lost.
- In the early 1960s, the Migratory Bird Conservation Commission recognized that there was “a pressing need for the restoration of waterfowl habitat in this part of the Pacific Flyway.”
- The Kootenai Tribe is a key partner in restoring refuge habitats.
- The Refuge revives habitats by mimicking natural processes, however the historic landscape can never be fully recreated.
- The restoration work that takes place at the Refuge is not a one-and-done task, but an effort that is indefinite and ongoing.
- Volunteers and neighbors help bring restoration to life. Community involvement is encouraged.

Tangibles: Waterways Floodplains Native species	Intangibles: Habitat restoration Change Resilience Connectivity Time
Universals: Resilience Time Change	Target Audience: Volunteers Repeat visitors Conservationists Community members Waterfowl Hunters
	

Theme: Kootenai National Wildlife Refuge is a place where nature and people come together, enriching the community as a space for exploration, creativity, learning, recreation, and shared stewardship.

Supporting Ideas and Concepts:

- The Refuge offers access to a variety of recreational activities, including wildlife observation, photography, waterfowl hunting, fishing, big game hunting, upland game hunting, and hiking.
- Recreational opportunities continue through winter, with snowshoeing and cross-country skiing on the Auto Tour Route and snowshoeing deep creek or old humpback trails.
- Living alongside nature and near green spaces offers physical and mental health benefits.
- The Refuge offers a scenic backdrop for the growing community of artists in Bonners Ferry.
- The environmental education barn can be used as a community gathering space for natural resource-related topics, free of charge.
- The Refuge offers 3 ADA blinds for waterfowl and 1 ADA blind for white tail deer.
- There is no fee to visit the Refuge.

Tangibles: Trails Education barn Knowledgeable staff Scenic landscapes Public lands	Intangibles: Outdoor recreation Community Belonging Connection Enjoyment
Universals: Belonging Community Connection	Target Audience: Outdoor enthusiasts School / youth groups Artists Health-conscious people
	

Theme: Water is the lifeblood of Kootenai National Wildlife Refuge. The variety of waterways found on the refuge sustain diverse life and enrich the community through ecological, cultural, and recreational value.

Supporting Ideas and Concepts:

- The water on this land serves a crucial purpose for migratory birds and wildlife.
- Wetlands function as “nutrient pumps,” with backflows that return water and nutrients to the river, enriching ecosystems downstream.
- Prominent water features include Myrtle Falls, the Kootenai River, Deep Creek, Myrtle Creek, Cascade Creek and many wetland ponds throughout the Refuge.
- The waterways of Kootenai NWR offer incredible bird viewing opportunities.
- Water-based recreation on the Refuge includes waterfowl hunting and fishing.
- Unique and prominent water-based wildlife include river otters, beavers, waterfowl, native fish, freshwater mussels, and more.
- Sturgeon and bull trout are protected species that are significant to the area.
- Many types of life that you may not expect rely on these waterways, such as the little brown bat and the Yuma bat.

Tangibles: Myrtle Falls Kootenai River Deep Creek Wetlands & floodplains Riparian habitats	Intangibles: Connection Dependence Life Sustenance Seasonal rhythm
Universals: Life Connection Transformation	Target Audience: Anglers / waterfowl hunters Artists Photographers Bird watchers
	

Theme: Kootenai National Wildlife Refuge’s rich tapestry of habitats supports a remarkable variety of wildlife species, while its location safeguards essential corridors that sustain migration and wildlife connectivity.

Supporting Ideas and Concepts:

- Kootenai NWR is strategically located to link vital migratory pathways, extending its benefits to wildlife well beyond its borders.
- Kootenai NWR is located along the Pacific flyway, making it a crucial stopping point for migratory birds.
- Geographical context highlights how wildlife can move north to south through the Selkirks while the Purcells and Cabinets restrict movement within the valley.
- Approximately 300 species of vertebrate animals occur on the refuge, including 45 species of mammal, 22 species of fish, and over 220 bird species.
- Large mammals such as grizzlies and caribou historically moved through this area, with moose, elk, white tail deer, and mule deer continuing to use the space.
- The area serves as a wildlife corridor for species you may not expect, such as western toads which use a migratory pathway from the Selkirks to the Cabinet mountain ranges.
- Learning about phenology can show us how wildlife rely on the Refuge differently as the seasons change.
- The Kootenai Tribe’s restoration projects along the river have reconnected floodplains, improved riparian habitats, and expanded critical pathways for wildlife movement.

Tangibles: Migratory birds Large Mammals Crucial habitats	Intangibles: Interconnectedness Movement Tradition Seasonal Rhythm Pacific Flyway
Universals: Movement Interconnectedness	Target Audience: Wildlife enthusiasts Hunters Birders
	

Theme: Kootenai National Wildlife Refuge’s identity is inseparable from the songs, flights, and lives of its birds, whose presence reflects success in the refuge's role of protecting critical avian habitats.

Supporting Ideas and Concepts:

- The purpose of the Refuge’s designation was “for use as an inviolate sanctuary for... migratory birds,” funded through the Migratory Bird Act.
- Kootenai NWR provides habitat for more than 220 species of birds.
- The variety of habitats featured on the refuge result in a variety of bird species found here. Dabbling ducks, birds of prey, songbirds, marsh birds and more can all be seen utilizing this land.
- The Refuge features many indicator species or recovery species such as bald eagles, sandhill cranes, trumpeter swans, and the cinnamon teal. .
- Strong familial structures, rearing roles, and lifelong mates are common among many birds and can be seen at the Refuge, especially in spring.
- The Refuge’s chorus of bird songs let birders practice identifying birds by ear, while everyone can enjoy the beauty of the sounds.
- Birding is a low-barrier outdoor recreation option that serves as a good gateway for connection with nature. Seasoned enthusiasts and beginners alike can enjoy the birdwatching opportunities on the Refuge.

Tangibles: Migratory birds Resident birds Crucial habitats Birdsong	Intangibles: Adaptability Family Beauty Migration Discovery
Universals: Beauty Family Discovery	Target Audience: Birders Waterfowl hunters Wildlife Photographers Beginner outdoor enthusiasts



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The following are the documents and resources used and referenced in the creation of the Interpretive Thematic Matrix.

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