FORT HAYS STATE UNIVERSITY'S
KANSAS WETLANDS EDUCATION CENTER

Science- and Nature-based School Programs
Preschool – 6th Grades

Designated as a Ramsar Wetland of International Importance, Cheyenne Bottoms provides an excellent opportunity to introduce more Place Based Education into your classrooms. The Kansas Wetlands Education Center is proud to provide high quality environmental education opportunities to students within a 60-mile radius of KWEC. And it's FREE! An educator can visit your classroom or you can bring students to the center on a field trip, still FREE! All our programs are designed to help your students meet the Next Generation Science Standards, all while getting students engaged in hands-on cross-curricular activities based on the natural wonders of our wetlands. Don't see what you need listed? We can work together to create something that meets your curriculum.

Contact – Mandy Kern, Program Specialist amkern2@fhsu.edu or call 1-877-243-9268 to schedule.

GENERAL PROGRAMS

Wonderful Wetlands – Students construct a marsh backdrop, adding plants and animals found in Cheyenne Bottoms. They explore the delicate balance of the wetland ecosystem and discuss the consequences when an element is removed. When available, live amphibians, reptiles, birds, and mammals are showcased during the program, providing real-life connections to the wetland habitat. For a comprehensive experience, consider combining the program with an outdoor hike to view Cheyenne Bottoms firsthand.

Cheyenne Bottoms and Water - Students investigate water quality by comparing wetland soil, sand, and gravel's water-holding properties. They'll also assess local water sources, including water from the Cheyenne Bottoms, using various measurement techniques. Students will discuss how wetlands play a vital role in maintaining water quality.

Water Cycle – Students investigate the natural water cycle through engaging activities. They'll model and explore how water moves between solid, liquid, and gaseous states, emphasizing the Sun's role and the importance of water conservation. Special emphasis will be placed on the functions of wetlands within the water cycle.

Alien Invaders – Students explore the impact of invasive species on Cheyenne Bottoms' delicate ecosystem. They'll identify native and invasive plants and animals, investigate threats posed by invasives, brainstorm control tactics, and learn about current strategies. We will observe and compare characteristics of both native and invasive species and discuss how invasives outcompete native species to disrupt the balance of the ecosystem.

Wetland Plants – Students explore the fascinating world of wetland plants and their unique adaptations. Through hands-on activities and observations, they'll discover the importance of wetlands in supporting diverse ecosystems. We will look at common wetland plants like cattails and bulrushes and these plants' roles within wetland habitats like Cheyenne Bottoms.

The Plant World of Cheyenne Bottoms – Students investigate plant adaptations across different habitats (water, riparian, prairie) within Cheyenne Bottoms. They'll also explore the classification differences between monocots and dicots. Students will compare different plants and discuss how plants cope with varying conditions, including water availability, soil types, and sunlight exposure to understand how Cheyenne Bottoms' diverse habitats support a wide variety of plant adaptations.

Cottonwood: Tree of the Great Plains – Students will explore how the Kansas state tree, the Cottonwood tree, survives in the challenging environment of the dry and windy Great Plains. We will discover specific adaptations that allow cottonwoods to thrive despite harsh conditions. We will examine tree cookies (slices of branches or trunks) to explore growth patterns in these trees.

Sensational Seeds – Students delve into the fascinating world of seeds and their survival strategies. They'll explore different mechanisms that ensure seeds endure harsh conditions, spread throughout their environment, and germinate successfully. Through hands-on activities and dissection, they'll uncover the mysteries hidden within seeds.

Pollinators: Plants' Best Friends – Students discover the vital connection between plants and pollinators. Through hands-on activities, they explore how pollinators (such as bees, butterflies, and hummingbirds) help plants reproduce. Students will also learn how plant adaptations to flower structures help attract pollinators and benefit both pollinators and plants alike.

A Butterfly's Journal –Students will learn about the stages of a Monarch butterfly's life, from egg to adult, and gain insights into metamorphosis. We'll trace the Monarch's epic migration route, discussing the challenges it faces and the remarkable adaptations that allow it to travel thousands of miles. Students can participate in a hands-on tagging activity, either during a field trip to KWEC or as a classroom demonstration. Tagging is available from August through early October.

Cheyenne Bottoms' Spring Chorus – Students will learn about the stages of frog metamorphosis, including egg deposition, tadpole development, and the transition to adult frogs. Students explore how, why, and where frogs and toads call. They'll even hear actual frog calls! Students participate in interactive activities to replicate frog calls, enhancing their understanding of these vocal amphibians. We discuss the impact of human influence on frog habitats, emphasizing conservation and habitat preservation. If available, students get up close with live amphibian representatives.

Is it Reptile or Amphibian? – In this program, students discover the distinctions between reptiles and amphibians. With the assistance of live animal representatives, they learn classification techniques. Additionally, students gain an understanding of the terms "cold-blooded" and "warm-blooded."

Making Tracks – In this program, students learn to identify animals by the tracks they leave in earth and snow. The hands-on activities include tracking exercises and creating plaster track casts for classroom exploration. For an immersive experience, consider combining this program with a hike to find and identify tracks in their natural habitat.

Mammals R Us – Students investigate the unique features that distinguish mammals from other vertebrates (fish, amphibians, reptiles, and birds). Through live animal observations, mounts, and skins, we explore mammalian adaptations, including tooth function and structure.

Extraordinary Eggs – Students explore the diverse roles of eggs in the lives of birds, reptiles, insects, and amphibians. They'll discover how these remarkable structures support reproduction and survival for many critters who live in wetland habitats.

SPECIAL PROGRAMS

Birds: Nature's Marvelous Flying Machines - The following group of programs focus on bird adaptations (*Grades 3-6)*

- **Create a Bird** – After discussing bird adaptations, students can create their own imaginary bird and describe its unique features. They can consider aspects like beak shape, wing type, coloration, and habitat preferences. Students are encouraged to use their creativity and imagination as they design their custom bird species!
- **The Case of the Hungry Owl** – In this engaging program, students become wildlife detectives as they unravel the mystery of the barn owls' diets. We'll dissect owl pellets to identify the victims consumed by barn owls that live in Cheyenne Bottoms.
- **Bills and Feet** – Students will explore the fascinating adaptations of birds' beaks and feet. They'll learn how these specialized features are perfectly matched to the food each bird consumes. Students discover the incredible diversity of bird beaks and feet and understand their role in survival. They'll participate in an interactive activity matching "tools" (beaks) to specific bird diets. Additionally, this program can be combined with a nature hike to observe birds in various habitats.
- **Have Wings, Will Travel** – Students will explore the fascinating world of bird migration. They'll learn why birds migrate and discover the mechanisms behind their incredible journeys. Through engaging activities, they'll gain a deeper appreciation for these remarkable avian travelers! We will discuss Cheyenne Bottoms' role as a Wetland of International Importance in providing resources and habitats for migrating birds.
- **Home Life** – Students will explore the fascinating world of bird nests. From cup nests to burrows, we'll learn about different nest types, materials, and the ingenious ways birds build their homes. We will discuss courting practices, brooding behaviors, and egg differences to learn more about these avian architects.
- **Fantastic Feathers** – Discover the magic of bird feathers in our engaging program! Educators and students will explore feather types, functions, and adaptations. Plus, get hands-on with a fun feather-matching activity to connect feathers to their feathered owners.

Kansas Day Symbols – This program celebrates the state's iconic animal and plant symbols and is perfect for the month of January! Explore the Kansas state symbols, from the mighty American bison to the tiny European honeybee. Student will feel bison hides, encounter live salamanders and turtles, and even see the world through a bee's eyes.

Home on the Range – Let's journey to the heart of the mixed-grass prairie, inspired by our state song, "Where the buffalo roam and the deer and the antelope play." Native American ingenuity comes alive as we explore bison artifacts; from bladder pouches, to bone paintbrushes and tail flyswatters, students witness how every part of the bison was utilized. Students will unravel the intricate relationship between plants and animals, discovering how they collaborate to sustain this vibrant ecosystem.

Halloween Critters – In this program, we debunk the myths surrounding bats, owls, spiders, and snakes. When possible, we'll introduce you to live animals, up close and personal. Get ready for a spine-tingling adventure with our creepy critters!

Batty About Bats – Ever wonder how bats find their way in the dark? We'll reveal their superpower: echolocation! Students will also explore the mist net, where they'll encounter "captured" bat models. Armed with scales and measuring tapes, they'll identify bat species by analyzing weight and forearm length. This program focuses on bats' special adaptations.

Turkey Talk – Discover the fascinating reasons why Benjamin Franklin championed the turkey as our national bird. Students will delve into turkey calls, examine turkey beards, and gain a newfound appreciation for this remarkable and wary feathered friend.

Baby Animals – Designed for preschool-kindergarten, students will explore the world of "babies" across the animal world. Through sight, sound, movement, and imagination, they'll discover the magic of these tiny creatures!

OUTDOOR PROGRAMS – Available at the Kansas Wetlands Education Center during Spring and Fall seasons

Habitat/Seasonal Hike – Students compare and contrast diverse habitats within Cheyenne Bottoms – marshes, grasslands, and woodlands – observing the unique animals and plants that call each home. The hike will reveal food chains and highlight seasonal changes. If scheduled during winter, students can search for tracks in the snow, uncovering hidden signs of life.

Wetland Study – Students observe wetland creatures and plants, then collect water samples for classroom microscopy. The program can also cover water quality indicators, and students have access to boots and waders for an immersive experience.

Insect Search – With nets and containers in hand, students search out invertebrates living along the nature trail. Our goal? To uncover the hidden world of invertebrates! Using magnifiers and microscopes, we'll dive deep into the intricate details to unravel the mysteries of these tiny creatures.