



2013 World Wetlands Day Report

Kansas Wetlands Education Center
Great Bend, KS 67530

In celebration of World Wetlands Day, the **Kansas Wetlands Education Center at Cheyenne Bottoms** sponsored a coloring contest in cooperation with Barton County schools and area businesses. The coloring contest was used as a follow-up activity for the annual 2nd graders Wetlands Day held at the KVEC each September.

Three hundred and nine 2nd grade students from 11 elementary schools in Barton County (public and parochial) completed a coloring sheet (see attached). The coloring sheet featured macroinvertebrates commonly found in wetlands, and included a short description of how scientists can judge water quality based on the types of macroinvertebrates found. An additional classroom activity and more information about each macroinvertebrate were also sent to each classroom (see attached).

After the students completed the coloring sheets, the entries were returned to the KVEC. Staff from the KVEC judged each of the entries, choosing the top two entries in each school. Winning entries were displayed at the KVEC on February 2nd.

Prizes from the KVEC were presented to each of the winners. Each winner received a KVEC backpack, "Kansas Symbols" poster, a Top 20 Birds of Cheyenne Bottoms identification card, and a certificate.

The community coordinator of Great Bend, KS recruited area business to display the coloring sheets in their stores. Each school's entries were assigned to a different business. The businesses displayed the entries from February 2nd to February 16th.



Coloring contest winners from Central Plains Elementary.

On February 2nd, the KVEC offered its first of three Winter Family programs. The program was based off World Wetlands Day, and was titled "Wild About Wetlands". Students dressed up as various wetland organisms and did a skit to demonstrate the ecology of a wetland and then constructed their own wetland out of a sponge to demonstrate the filtering function of wetlands.

A news release was submitted to the Great Bend Tribune describing the coloring contest and announcing the winners. The article was published February 10th, 2013 (see attached). An article about the coloring contest also appeared in the Hoisington Dispatch. Prior to the coloring contest, KVEC staff wrote an article for the Great Bend Tribune describing the importance of wetlands and World Wetlands Day.



Students dress up in various wetland organism costumes to demonstrate wetland ecology.

WORLD WETLANDS DAY 2013

Scientists can tell a lot about water quality by the kinds of critters that live there!

These bugs are found where water quality is good:

1. Mayfly Adults
2. Mayfly Larvae
3. Leeches
4. Caddisfly Larvae

These bugs are found where water quality is both good and poor:

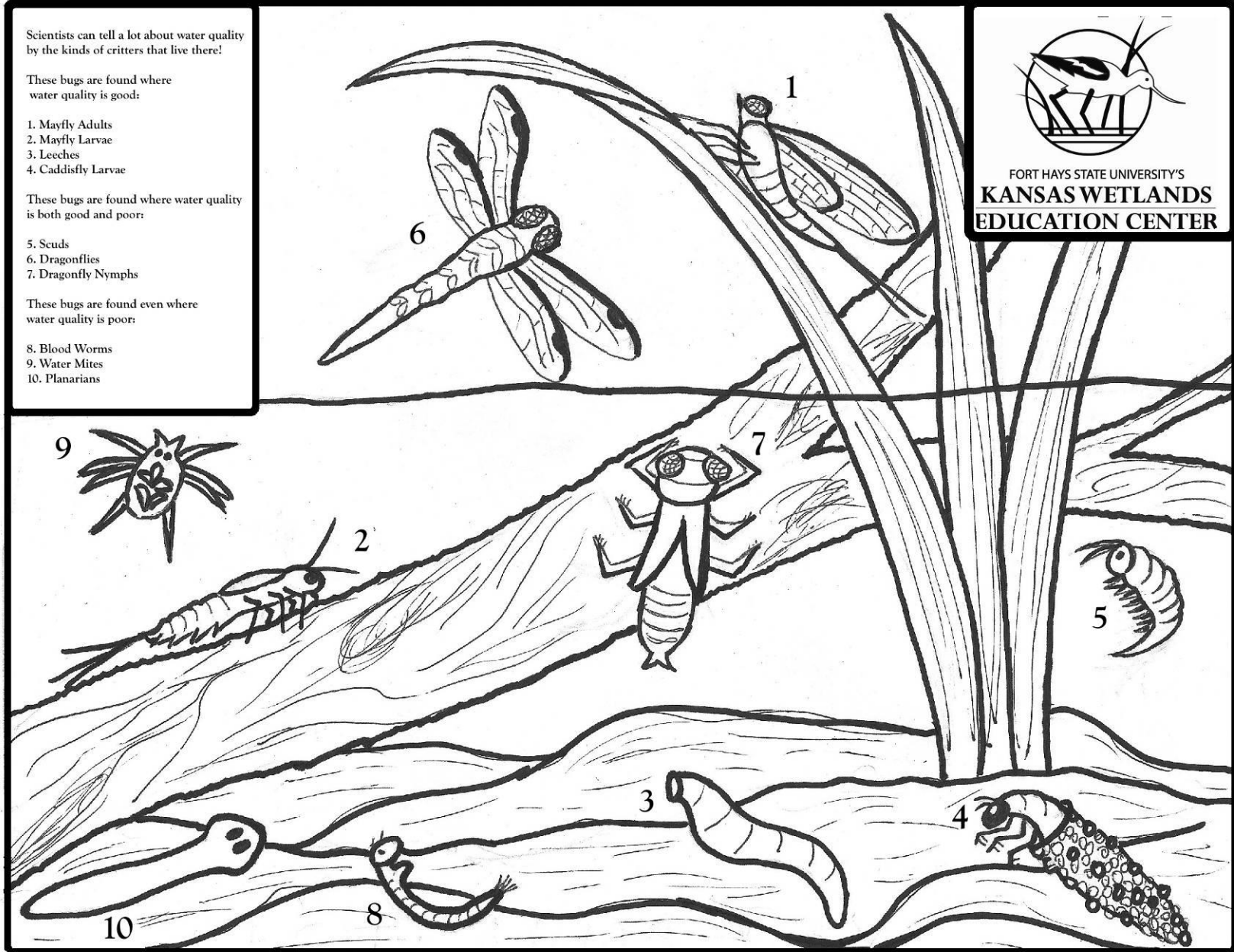
5. Scuds
6. Dragonflies
7. Dragonfly Nymphs

These bugs are found even where water quality is poor:

8. Blood Worms
9. Water Mites
10. Planarians



FORT HAYS STATE UNIVERSITY'S
**KANSAS WETLANDS
EDUCATION CENTER**



Name _____ School _____

KWEC announces coloring contest winners

BARTON COUNTY — The Kansas Wetlands Education Center announces the winners of the 2013 World Wetlands Day Coloring Contest. Three hundred and nine second grade students in Barton County completed a coloring page featuring invertebrates that play vital roles in wetland ecosystems.

Two winners were chosen from each school, and the winning coloring pages are displayed at the Kansas Wetlands Education Center. The winners received a Kansas Wetlands Education Center bag, a "Kansas Symbols" poster and a "Top 20 Birds of Cheyenne Bottoms" card.

Great Bend Community Coordinator, Christina Hayes, worked with Great Bend businesses to display the students' artwork.

The winners of the coloring contest are listed by school, along with the business displaying that school's entries: Central Kansas Christian Academy (Rana Luna), 1st place, Addy Guthrie, runner-up, Adison Galusha; Central Plains Elementary School (Barton County Historical Society), 1st place, Michael Layman, runner-up Ty Turner; El-linwood Grade School (Cornerstone Interiors), 1st place, Jacob Hayes, runner-up, Sam Brauer; Eisenhower School (Rosewood Furniture Gallery), 1st place, Analiz Rivas, runner-up, Kennedy Sandy; Jefferson School (Bass X Autosound), 1st place, Bailey Reed, runner-up Ashlin Tinkler; Lincoln School (Kansas Mercantile), 1st place, Andrew Trendall, runner-up, Drexler Gardner; Park School (Brit Spagh Zoo), 1st place, Dalton Cline, runner-up, Rachel Clark; Riley School (Kustom Floor Designs), 1st place, Gabriel Balderrama, runner-up Dannie Nieto; Hoisington Roosevelt Elementary School (RB Tellers), 1st place, Rylee Nichols, runner-up Adison Rippie; Holy Family School (Bauer Computers), 1st place, Nelson Legleiter, runner-up, Brecken Carroll; and St. Joseph School (*Great Bend Tribune*), 1st place, Britton Dutton, runner-up Ella McNett.



COURTESY PHOTO

Coloring contest winners from Central Plains Elementary School were: 1st place, Michael Layman (left) and runner-up, Ty Turner.



COURTESY PHOTO

Coloring contest winners from Great Bend Eisenhower Elementary School were: 1st place, Analiz Rivas (left) and runner-up, Kennedy Sandy.

2013 World Wetlands Day

About the animals on the coloring sheet

All the animals on the coloring sheet can be found at Cheyenne Bottoms. You may want to provide your students this information about each of these animals as part of the classroom activity.

Mayflies

Mayflies are important critters at Cheyenne Bottoms. The larvae burrow into the mud while they grow, until they're ready to become adult mayflies. Adult mayflies live only a day or two, just long enough to lay the eggs for the next generation of mayflies. Mayflies only live where the water is very clean.

Leeches

Freshwater leeches live in very clean water. Most leeches eat other invertebrates, but some species actually suck the blood of other animals!

Caddisflies

Caddisflies build a special cocoon out of silk, and cover it in sand, pebbles, and twigs from their surroundings. This camouflaged cocoon helps them hide from predators. Caddisflies are usually found in areas with clean water.

Scuds

Scuds are also known as freshwater shrimp. They live in all kinds of water, and eat plants and animals. They are very tiny, only the size of a grain of sand!

Dragonflies

Dragonfly larvae are ferocious predators, they hunt other aquatic invertebrates. Adult dragonflies hunt other flying insects, like mosquitos. They're found in all kinds of wet environments. There are over 5,000 species of dragonfly in the world!

Blood Worms

Blood worms are the larvae of midges, and they're very important at Cheyenne Bottoms. There are about 50 blood worms in every square inch of the marsh during the warm months of the year, feeding the thousands of shorebirds and ducks that migrate through central Kansas. Blood worms are found in very muddy areas.

Water Mites

Water mites are close relatives of spiders. They eat other invertebrates, including mosquito larvae. Water mites are very small, even tinier than a grain of sand!

Planarians

Planarians are also called flatworms. Planarians can regenerate their bodies if they are injured, even if they are cut in half!

Additional Activity

Ask the Bugs!

Students will examine the relationship between aquatic invertebrate populations, water quality, and land use.

Background Information

A wetland like Cheyenne Bottoms collects water from a wide area around it, called its watershed. Different ways that people use the land can have big effects on the quality of the water, and the kinds of invertebrates that can live in that water (Table 1). Scientists can quickly assess the level of pollution in a watershed by taking water samples and counting the different kinds of invertebrates in those samples. Different species have different tolerances for pollution (Table 2).

Poor water quality doesn't just mean pollution from chemicals; it can also mean that water has a lot of dirt and sediment. When soil is eroded from farmland or elsewhere, it washes into water bodies. Some invertebrates just can't handle the dirt in their water! Even invertebrates that can tolerate muddy water can still be harmed by pesticides.

Table 1. Land Use – It's important to remember that most land use activities can be done without damaging water quality, as long as people take the proper precautions!

Land Use	Possible Pollution
Agriculture	pesticides, sediment runoff
Landfills	chemicals, bacteria
Urban Areas	pesticides, fertilizer, household chemicals

Table 2. Common invertebrates – As seen on the coloring sheet, there are many different invertebrates living in Cheyenne Bottoms. Here are a few, and their tolerance for poor water quality. Sensitive invertebrates are killed or driven off by poor water quality, somewhat tolerant invertebrates will be found in poor and good quality water, and tolerant invertebrates are well adapted to poor quality water.

Invertebrate	Water Quality Tolerance
Mayflies	Sensitive
Leeches	Sensitive
Caddisflies	Sensitive
Scuds	Somewhat tolerant
Dragonflies	Somewhat tolerant
Blood Worms	Tolerant
Water Mites	Tolerant
Planarians	Tolerant

Activity

Supplies – several bags or cups, beads or colored candy in at least three colors

Prep - Put 30 beads or pieces of candy into your containers, these are the invertebrates in your "water samples." Make sure that each bag has a different proportion of colors.

Discuss water quality issues with students. Do they think it would be easy for invertebrates to live in muddy water, or water with extra chemicals?

Pass out water samples to small groups of students; tell them which colors represent sensitive, somewhat tolerant, and tolerant invertebrates. Have them sort the beads or candies, and count their "invertebrates." Ask them what they think their invertebrate numbers say about the water quality of their "sample." You can also graph the "samples" on the board, and compare each group's water quality. What do they think might have caused the differences in water quality between each group?