Kentucky Wetlands Up Close

2025 Conservation Writing and Jim Claypool Art Contest

Start an Envirothon Team

Are you a high-school student who is interested in environmental issues? If so, then you and your friends should form an Envirothon team. The statewide competition allows high school students to team up on a series of hands-on outdoor contests to solve environmental problems and test their knowledge of natural resources.

The event is made up of teams of five high school students competing in five different areas: aquatics, forestry, soils, wildlife, and a current issue. The 2026 current issue is "Non-Point Source Pollution: It begins at home!" At each site, students will use their knowledge to participate in hands-on activities to complete a test. The Kentucky Envirothon consists of two regional competitions. Top scoring teams from each regional competition will move on to the state competition. Regional competitions are held each year in April, and the state competition is held in May. Registration for next year's competition will begin in December.

Contact Information:

YOUR LOCAL CONSERVATION DISTRICT:
eec.ky.gov/Natural-Resources/Conservation/Pages/Conservation-Districts.aspx

DIVISION OF CONSERVATION ENVIROTHON:
eec.ky.gov/Natural-Resources/Conservation/Pages/Envirothon.aspx

Johnna McHugh: 502-782-6703 or johnna.mchugh@ky.gov

Kentucky's Forested Ecosystems and Water Quality

Ecosystems are dynamic interactions between plants, animals, and microorganisms and their environment working together as a functional unit. A forest is a large ecosystem. Forests grow in a wide variety of climates. Kentucky's forests are temperate and deciduous. The word "deciduous" means exactly what the leaves on these trees do: change color in autumn, fall off in the winter, and grow back again in the spring.

So, what is a forested ecosystem? All the organisms (trees, shrubs, herbs, bacteria, fungi, and animals, including people) together with the surrounding air, soil, water, organic debris, and rocks, interact inside a defined boundary. The term biotic means living or having lived. Examples of biotic factors would include a frog, a leaf, a dead tree, or a piece of wood. The

term abiotic means non-living, or never having lived. Examples of abiotic factors would include gold, rock, a bicycle, a brick, and cement. Biotic and abiotic factors combine to create a biological system, or more precisely, an ecosystem. This complexity of species interacting together in the ecosystem and the abundance of each species is called biodiversity.

Kentucky's diverse landscape includes the eastern Kentucky mountain ridges, the forests of central Kentucky and the bottomlands of western Kentucky. The eastern part of Kentucky has Appalachian mixed mesophytic forests. The dominant trees in this area are yellow-poplar, American beech, white oak, sugar maple and eastern hemlock. Here you will find black bears, wood frogs, elk and ruffed grouse associated with this forest type. The central part of Kentucky has tree species such as eastern red cedar, sassafras, hackberry, white oak, red oak, and hickory. Here you will find deer, turkey, and coyotes associated with this forest type. The western part of the state has swamp and bottomland tree species. The dominant trees are green ash, sweetgum, pin oak, and cherry bark oak. Here you will find migrating ducks, turtles, cranes and red-tailed hawks associated with this forest type.

In nature, the organic materials needed by all organisms in a forested ecosystem are reused or recycled. Nitrogen, carbon, water, oxygen, and other nutrients move through the forested ecosystem in a predictable pattern or cycle.

Let's Focus on the Water Cycle!

The water cycle is full of those "TION" words like condensation, precipitation, evaporation and transpiration. Transpiration occurs when trees release water vapor as part of the photosynthesis process. There are little holes underneath the leaves called stomata. The stomata allow water to escape the tree just like the pores on human skin. Transpiration acts like a big air conditioner and helps protect our climate from changing. Trees cycle a lot of water through the water cycle. Forested ecosystems have key functions that affect water supply and quality, such as filtering, retention, and water storage in streams, lakes, and aquifers. Forested ecosystems can provide clean drinking water and help reduce the impacts of floods from storms by blocking and slowing down the flow of runoff.

Understanding Kentucky's Wetland Ecosystems

Kentucky is home to many beautiful and unique ecosystems. One of the most unique ecosystems found in Kentucky is wetlands. Wetlands are areas where water covers the ground or is just underneath the surface for either part of the year or year-round. They are important to keeping a healthy environment, supporting clean water, and are full of both plant and animal life. There are seven different types of wetlands that can be found in Kentucky: bogs, fens, vernal pools, swamps, marshes, floodplains, and wet meadows.

BOGS

Bogs are formed slowly as layers of dead plants build up over time. These layers are called peat. Bogs get most of their water from rain, meaning the water is usually acidic and has few nutrients. One plant usually found in bogs is moss, which covers the ground throughout the area. Some carnivorous plants, like sundews, can also be found here. While bogs are not common in Kentucky, they can be found in eastern Kentucky.

FENS

Fens are similar to bogs, as they are also made up of peat, but fens receive their water from runoff and groundwater. The water in fens is usually more filtered before entering the wetland, so plants like grasses and wildflowers are more common in these areas. Fens can be found in northern and eastern Kentucky.

FLOODPLAIN WETLANDS

Floodplain wetlands are a type of wetland that exist next to or near a stream or a river. These wetlands are very likely to flood during heavy rains. They act like a natural sponge, soaking up excess water and reducing excessive flooding, then slowly release it back into the surface and groundwater, helping to keep water levels consistent year-round. They also help filter some pollutants carried in runoff before they reach the surface water. These areas are full of nutrients, meaning that many different types of grasses, shrubs, trees, and wildflowers can grow here. There are many floodplain wetlands located in northern and central Kentucky.

MARSHES

Marshes are wetlands that are always filled with water. These areas are home to plants like cattails and other tall reedy plants, which are adapted to “breathe” in very wet ground and make a good home for ducks, geese, and other aquatic birds. Marshes can be found near lakes and rivers, but can also be found inland of these areas. These kinds of wetlands are commonly found in western Kentucky.

SWAMPS

Swamps are similar to marshes but have a few key differences. Swamps are usually very wet, but are not always filled with water. Instead of tall grasses and reedy plants, swamps are full of woody plants like trees and shrubs. Many different animals also frequent swamps, like ducks, snakes, and river otters. Swamps are usually found in western Kentucky.

VERNAL POOLS

Vernal pools are a kind of wetland that are only filled with water during certain seasons, usually in the spring or winter. These are smaller wetlands that vary with the plant life that can be found there, like grasses and ferns, but can also be home to small animals like frogs or salamanders. Vernal pools provide vital habitat for amphibians who need to reproduce in fishless, low-flow water. These kinds of wetlands can be found in eastern Kentucky.

WET MEADOWS

Wet meadows rarely have standing water for long periods of time. Wet meadows usually contain water during the spring and summer. These wetlands are home to many different types of tall grasses and wildflowers and provide a good habitat for pollinators like bees and butterflies. Wet meadows can be found in central and eastern Kentucky.

Each of these wetlands plays a different role in keeping Kentucky's environment healthy. They help prevent floods, filter dirty water, provide habitat for wildlife, and provide a good place to enjoy the outdoors with friends or family. Whether the wetland is a marsh filled with grasses or a floodplain next to a river, these ecosystems are always working to help maintain and preserve wildlife ecosystems.

Wetlands Can Help Keep Kentucky Communities From Flooding

Flooding is the overflow of water onto normally dry land. It can happen for different reasons, like rapid runoff of surface water caused by heavy rainfall or snowmelt. Flooding has taken a toll on many parts of Kentucky. Many communities in Kentucky have started to use nature-based solutions. Nature-based solutions are actions that protect, conserve, restore, and sustainably manage natural or modified ecosystems. One of those solutions is wetlands.

Wetlands are natural sponges and hold large amounts of water during a flood event because they are a natural depression in the earth, have water-loving soils and water-loving vegetation.

Even after wetlands have absorbed as much water as possible, they still reduce the effects of flooding by slowing the flow of floodwaters. Their vegetation and uneven surface slow down the overflow of floodwaters and reduce the potential for destruction downstream.

Figure A shows an example of a wetland that could be used for flood protection. When the floodwaters start to raise the height of Gunpowder Creek to flood stage, instead of flooding a downstream community, they pour into the wetland by way of the Connector Channel, thereby reducing the potential for downstream destruction.

Figure A. Boone County Conservation District YMCA Bankfull Wetland

Many wetlands, like the ones in Figure B, are not connected to nearby streams such as Salt Lick Creek. Even though these wetlands can still help by holding some stormwater, they don't work as well to stop flooding as wetlands that are connected to streams. The Kentucky Division of Water is working to reconnect some wetlands to streams. This helps floodwater go into the wetlands first, which can protect farms and towns from flooding.

Figure B. Wetlands in Bath County that are NOT connected to Salt Lick Creek.

In addition to helping to reduce flooding, wetlands are extraordinary natural aquatic habitats, teaming with many plants and animals. Using wetlands for flood protection does double-duty; they help with flood protection and they create an aquatic habitat for nearby organisms.

The Secret Life of Wetlands

If you were to visit a wetland during the day, it would just seem like an ordinary field with patches of flooded water, and not much else going on. Were you to visit the same spot

again at night, you would be surrounded by a symphony of noise made by the frogs living there. And they're not the only ones.

Wetlands are critical habitats that most of our amphibians in Kentucky rely on for either a permanent home or as a safe place to foster another generation of babies. Some frogs and salamanders in particular are entirely dependent upon seasonal wetlands that allow them to lay their eggs in a safe place away from predators. A native species to Kentucky, the Tiger Salamander, spends its entire life within 500ft of the wetland it was born in, and it instinctively knows each year to go back in the spring along with the rest of its community. These salamanders couldn't substitute this habitat for any old pond either; one of the most crucial aspects that defines wetlands is that they have periods where they dry up and no longer form a body of water like a normal year-round pond would. Because of this, fish populations don't typically live in ephemeral (temporary) wetlands, which allows for way more salamander and frog larvae to survive since they are not being eaten by predator fish. Wetlands provide diversity to the kinds of ecosystems available for amphibians, and without that diversity, we would lose a lot of unique and vital species that thrive in them.

When talking about conservation, soil and water typically go hand in hand as they are the two biggest renewable resources that give way to life on earth. The health of both, however, is dependent upon proper management and separation of the two. When soil erodes (gets worn away) and makes its way into water as sediment, that is a form of pollution. Soils carry lots of excess nutrients with them, like phosphorus and nitrogen, and putting too much of this in the water can make it dangerous for all the organisms that rely upon it, including us. The amount of sediment in water is called turbidity, and this is what causes water to become very cloudy, which prevents light from reaching the plants and animals that live below the surface. This can lead to decreases in fish populations, a buildup of algae on the surface of water bodies, and more difficulty treating water for human use.

What causes soil erosion?

Soil erosion can be caused by natural factors and by manmade factors; it's conservationists' job to try to prevent both. Natural factors that lead to soil erosion are things like floods and strong winds that rip soil up from the ground and disperse it. Soil erosion is also more likely in areas that are really steep, which is why landslides will occur in sloped areas like the sides of mountains. Humans are always contributing to soil erosion as well through many of our common practices that try to make human life more convenient. Urbanization and deforestation both lead to soil erosion as we clear the way for more space for people to live and work. Trees are a big part of what keeps soil safely

rooted in the ground, and when they are removed, the soil becomes fragile and vulnerable. Another factor is poor agricultural practices like plowing or monoculture cropping that can wear away at land over time and make the soil weaker and worse for farming.

How can you prevent soil erosion?

The best way to prevent soil erosion is through conservation land management. Practicing no or low tilling farming, not planting crops along steep platforms, planting native vegetation in areas not currently being farmed, and planting more trees will all act to strengthen our soil. Soil acts as a natural filter for our water, and when you allow for things like riparian buffers (plants and trees surrounding a river or stream), you can protect your water from so many different sources of pollution. By keeping our soil intact, this, in turn, keeps our water and our people healthy.

World of Water Fun Facts!

The ocean covers over 70% of the Earth's surface.

Did you know? There is the same amount of water on Earth today as there was when the Earth was formed.

Kentucky Wetlands and Forest Activities

Wetlands are widespread throughout the Commonwealth, with some being made over time by Mother Nature, and some forming over time from other activities such as mining, construction, and forest activities. Wetlands are an important natural resource in Kentucky.

These areas, where water covers the soil or has water near the surface for most of the year, are home to many species of plants and animals. They can be shrubs or forested areas, as well as open waters. Most wetlands in Kentucky are marshes or swamps. Some plant and tree species commonly found in Kentucky wetlands are cypress, swamp white oak, cattails and rushes. These are just a few examples, but keep in mind that in a wetland, all the plants and trees are adapted to grow in waterlogged or saturated soils (known as hydric soils).

Kentucky wetlands provide habitat and food for wildlife such as bald eagles, waterfowl, swamp rabbits, blue catfish, wood frogs, and many more. Species such as the alligator gar, swamp darters and the copper belly water snake are threatened or endangered in Kentucky, and they, along with others, depend on wetlands for their survival.

Wetlands are an important resource to humans for their ability to help filter water, control flooding, and return nutrients to the soil. Trees from wetlands provide us with wood

products and opportunities for recreation, such as bird watching, fishing, and hunting. In general, wetlands are good areas for connecting people with nature.

Why Do People Harvest Timber from Wetlands?

Timber from wetlands is often unique. Trees like cypress and swamp white oaks grow in these wet areas and can be used to make furniture, flooring, and even boats. Harvesting timber can also help the economy by creating jobs in logging and wood products.

Kentucky Regulations for Timber Harvests

Kentucky passed the Agriculture Water Quality Act (AWQA) in 1994 with the goal of protecting the waters of our state from pollution. In 1998, The Kentucky Forest Conservation Act was passed, which placed the responsibility on Logging Operators to protect the water surrounding their harvests. This act sets rules and requirements for logging and forest activities to protect water and wetlands from pollution. The requirements are Best Management Practices (BMPs), which help keep our water clean and our environment healthy. The Logging Operators attend training to learn how to use BMPs properly.

Forest Ranger Technicians from the Kentucky Division of Forestry inspect timber harvests across the state. Forest Rangers focus on the BMPs to ensure water quality is maintained during the timber harvest, from start to finish. They make sure Logging Operators keep a Streamside Management Zone (SMZ), along with an appropriate buffer of trees by perennial streams, and that treetops are not left in the stream or channel. They also make sure that roads built are well-maintained and do not deposit sediment into the stream.

Protecting Wetlands While Harvesting Timber

In Kentucky, wetlands have special Best Management Practices that are required. This means that when working in wetlands, there are extra rules to follow to make sure these sensitive areas are protected.

Minimizing road construction and vehicle traffic is crucial when loggers work in or near a wetland. In addition, it is required to locate log landings on higher ground while also avoiding crossing streams or bogs. By implementing these additional measures, loggers can avoid disturbing the land and water, which is vital for protecting the plants and animals that inhabit these areas.

Overall, these Best Management Practices help ensure that forestry activities are done in a way that respects and protects our natural resources, so future generations can enjoy them too. Harvesting timber near wetlands can be helpful for people, but it must be done with care. Wetlands are valuable ecosystems that need protection.

Exploring a Wetland

What is a wetland, you might ask? A wetland is an area where shallow water covers the soil. Wetlands can be coastal and have salty water, like the Florida Everglades, or can also be inland with freshwater, like Trumbo Bottom in Frankfort, Kentucky. Wetlands can hold more or less water with the changes in seasons and the amount of precipitation - rainwater, snow, and ice. Like Trumbo Bottom, some wetlands can hold 100 million gallons of water or more!

Wetlands create a home for many types of unique species. Alligators, frogs, fish, turtles, salamanders, birds, deer, and raccoons can all live in a wetland. Many species of birds migrate to wetlands for breeding and nesting seasons. Don't forget plants! Plants, big and small, like cattails and water lilies, live around or in the water of a wetland. But what else lives under the water of a wetland?

Aquatic species are organisms that have evolved to live fully in the water, like fish. Terrestrial species are organisms that have evolved to live on land, like deer and raccoons that may drink water or eat from a wetland. Some species, like frogs and salamanders, are specially adapted to live in both water and on land for some or all of their lives, and are amphibious.

Below the surface of the water in a wetland, live thousands of organisms called macroinvertebrates. Macroinvertebrates are organisms that do not have a backbone and can be seen without a microscope. Aquatic or amphibious macroinvertebrates, like spiders, snails, worms, sowbugs, insects, insect larvae, crayfish, and mussels live in the water or the soil, sand, or rocks underneath the water. In a wetland, these organisms are often the first stop on the food chain and are keystone species to many food webs.

Many macroinvertebrates start as eggs laid by insects. Their life cycle starts in the wetland's water and they grow into larvae and then pupae. Once they become old enough to leave the water, the pupa will molt by shedding their exoskeleton and emerge from the water with wings. The adults often look much different than their larval stage, like the larva hellgrammite and the adult dobsonfly.

Aquatic worms, spiders, crayfish, mussels, snails, and other species live their whole life cycle underwater. Mussels and some worms are dependent on fish to complete their life cycle in the water. Aquatic worms may be a parasite, an organism that lives on or in a host organism and gets its food from or at the expense of its host. Though mussel larvae hitch a ride by attaching to fish gills, mussels do not cause the fish any distress. Eventually, the mussel larvae leave the fish to finish growing in the sand or rocks at the bottom.

Macroinvertebrates are small, but not as small as some of the microorganisms found in a wetland. Microorganisms (or microbes for short) are organisms that need a microscope to be seen. These include bacteria, protozoans, algae, and even some fungi. Many are single-celled organisms that are made of one cell. In a wetland, they can live in the water, soil, and in other animals.

Many microorganisms are at the base of the food chain as primary producers, an organism that makes its own food by photosynthesis (through sunlight) or chemosynthesis (breaking down chemicals for food). Microbes process nutrients and chemicals in the water, such as nitrogen and phosphorus.

Microorganisms in a wetland can be free-floating or be able to move with a flagellum or cilia. Some are even predators, feeding on other types of organisms or algae. Certain species of microorganisms can be harmful to humans, such as the bacteria Escherichia coli (E.Coli) or Salmonella. If ingested, these microbes can lead to a massive and potentially dangerous tummy ache!

A wetland can also trap carbon from the atmosphere. This process is called carbon sequestration, and it removes greenhouse gases from the air. Removing greenhouse gases helps keep the planet cool. Wetlands across the country help remove hundreds of tons of carbon from the air each year. Healthy wetlands store more carbon than unhealthy wetlands.

In a wetland, the more biodiversity, or the variety of different types of species, the healthier the ecosystem. All organisms, big or small, are important to the larger food web and nutrient cycles in a wetland. Taking a look under the surface of the water in a wetland can give you a view into a hidden world. A world with strange and beautiful creatures.

So the next time you visit a wetland, take a net, a handheld microscope, a magnifying glass, and a small tub or container, and scoop up some macroinvertebrates or microbes. See what you can scoop up!

What Is That?

What insect has colorful wings, zips around all summer, and starts its life in a wetland as a ferocious predator? It's a dragonfly!

Dragonfly nymphs, or larvae, have an elongated mouth and spiky appendages on the sides of their abdomen, making them look like an alien creature. Dragonfly nymphs have gills to breathe underwater located in their rectum. You heard that right, they breathe through their hind end!

Not only can they breathe through their hind end, they can pull water in through it, and expel it quickly, creating their own jet propulsion. Dragonfly nymphs use their extendable jaws and speed to ambush their prey.

Instead of taking a pinch out of your toes, these nymphs seek out other organisms, like mosquito larvae, to eat. This helps keep the mosquito population in balance. Some studies say one nymph can eat a hundred mosquitoes in a day!

Wetland Algae

What organisms can be green, red, brown, or teal, might look like a plant- or might not, and live in a wetland? It's algae!

Algae is a term used for simple organisms that can be part of the plant family or have some plant-like characteristics and be part of protozoan or bacterial families. Most algae are single-celled and can only be seen with a microscope. Multicellular ocean algae are called kelp. There are approximately 50,000 species of algae in freshwater and seawater!

Green algae have chloroplasts and chlorophyll, giving them a green color like plants. Red algae often look like red ferns and mostly live in the ocean. Blue-green algae, or cyanobacteria, can grow into large blooms called Harmful Algae Blooms (HABs) and produce harmful toxins. Large freshwater and ocean blooms of algae or cyanobacteria can take oxygen out of the water, which may lead to fish and other animals dying.

Though large blooms can be dangerous, algae plays an important role in a wetland ecosystem by providing food at the very bottom of the food chain and cycling nutrients, like nitrogen.

Helpful Websites

National Science Foundation: Macroinvertebrates.org

Missouri Department of Conservation Field Guide: mdc.mo.gov/field-guide/search?fgSpeciesType=1001

SERC Microorganism Guide: msnucleus.org/watersheds/mission/plankton.pdf

Wetland Vocabulary

WETLAND: is an area where shallow water covers the soil

PRECIPITATION: rainwater, snow, and ice.

AQUATIC SPECIES: organisms evolved to live fully in the water

TERRESTRIAL SPECIES: organisms evolved to live on land

AMPHIBIOUS: organisms adapted to live in both water and on land

MACROINVERTEBRATES: organisms that do not have a backbone and can be seen without a microscope

NYMPHS: insect larvae

PARASITE: an organism that lives on or in a host organism and gets its food from or at the expense of its host

MICROORGANISM: (or microbes) organisms that need a microscope to be seen

PRIMARY PRODUCERS: organisms that make their own food by photosynthesis (through sunlight) or chemosynthesis (breaking down chemicals for food)

CARBON SEQUESTRATION: the process of removing greenhouse gases from the air into a reservoir

BIODIVERSITY: the variety of different types of species found in an area

World of Water Fun Facts!

75% of the brain is made up of water.

A majority of Earth's freshwater is stored in aquifers, glaciers, and ice caps.

Healthy Wetlands and Water Quality

Wetlands do more than stay wet for most of the year. They are superpowered areas that have an important role to play in both aquatic and terrestrial ecosystems. They provide habitat to animals adapted to both water and land, keeping them alive and active year-round. But how do they improve the quality of your water?

Wetland plants act like superpowered water filters.

Plants that grow in wetlands are great at soaking up dirty water. They are well adapted to living in soggy, low-oxygen environments. While most plants would drown, wetland plants have special tubes that allow them to breathe. Their root systems are very strong and flexible, often growing in mats to move with the changing water levels. As they soak up water, they trap pollution in their tissue, transforming it into usable nutrients. Some common wetland plants in Kentucky include buttonbush, sedges, and cattails.

Wetland soils act like giant sponges.

Soils in wetlands look, smell, and work differently from regular soils. They even have a different name, hydric soil. They are often wet, anaerobic (low in oxygen), gray or black in

color, and full of tiny creatures like bacteria and fungi. Wetland soils are great at holding water like a sponge. While water is trapped in wetland soils, microbes can break down waste and pollutants, making them great solutions to water pollution. Also, healthy wetlands can store carbon in the soil as the anaerobic environment slows breakdown.

Wetlands provide a natural solution to flooding.

Extra water is no problem for a wetland. They soak up rainwater like a sponge. During heavy rain events, wetlands play an important role in holding the extra rainwater for long periods of time, slowly releasing it into the ground rather than straight into our streams. This can be very helpful during droughts (long periods of dry weather that can cause water shortages). Wetlands near streams and river systems can also help regulate water levels. Here's a fun fact: one acre of wetland can hold over 1 million gallons of water.

The Oldest Conservationists

Farmers are the oldest, and possibly the best, conservationists that exist. Since the beginning of time, farmers have tried to make conscious decisions to help improve our natural resources. They spend countless hours adjusting their individual operations so that they make the very least impact on the environment as possible.

Water is a crucial resource for farmers across the globe. It provides a source of nutrients for growing crops, hydrating livestock, and sustaining life for the farm family. Over the years, farmers have implemented several practices that prevent unwanted nutrients or pollutants from entering our water sources. One prime example of this is grid sampling their fields for fertilizer applications. Through the use of the grid, a producer can limit the amount of fertilizer applied to crops, which prevents runoff from filling our waterways with nitrogen, phosphorus, and potassium. Fertilizer is only applied in the needed amounts for each specific area of a field, which limits any excess application.

Another management practice that livestock producers use to conserve our water is the heavy use of feeding areas for animals. These specific feeding locations are set up using special fabric with a rock covering. With the durability of these constructed feed pads, animals are less likely to degrade the ground surface during feeding months, which limits the amount of erosion that can pollute a stream. Manure is scraped from these sites and applied to the farmer's fields based on their nutrient management plan, preventing the producer from applying more nutrients to the ground than are needed or can be utilized.

The most common practice that many farm families use to protect and conserve water is probably also the simplest concept. Limiting access of livestock to streams and waterways has definitely been a huge benefit to the water systems across the US. In today's farming world, access for livestock to water has become much less of a problem than it was in the

past. With new innovative automatic watering systems connected to city or county water, there is an abundance of ways to water animals while not having to allow them access to open bodies of water, such as creeks and streams. Farmers now choose, in many situations, to fence along the banks of these streams to prevent animals from entering them.

City and county municipalities are also assisting farmers in ways to keep our water sources clean. In Kentucky, many local governments offer cost reimbursement for the disposal of a producer's animal mortalities. By picking up and disposing of these deceased animals, farmers no longer have to make the decision of how to deal with an animal that has succumbed to disease or weather conditions. This is very obvious when strolling along the banks of local waterways or taking a canoe trip down our favorite stream, as there is no longer a presence of these carcasses as there once was 50 years ago.

Farmers are the best and oldest conservationists in almost every case. Years of trial and error have taught them to protect not only water, but all of our natural resources. The better the environment thrives, the more productive animals and crops alike are for the average farmer.

Ways to Prevent Nutrients from Getting Into Streams

- Keep livestock out of streams
- Follow directions when using fertilizers
- and don't use more than you need
- Capture and filter runoff in rain gardens
- Make a rain barrel
- Plant riparian buffers
- Plant trees and native plants
- in the watershed
- Pick up after your pets
- Keep yard waste out of streams
- Maintain septic systems
- Prevent soil erosion

World of Water Fun Facts!

Ice floats because it is less dense than water.

Millions of bacteria, viruses, and other microorganisms can live in a single drop of water.

Only 3.5% of Earth's water is freshwater.

Conservation Writing and Jim Claypool Art Contest Rules

STATE WINNERS:

First: $250; Second: $150; Third: $50

REGIONAL WINNERS: $50

COUNTY LEVEL WINNERS: $25

* State/Regional winners will receive a personalized certificate. County winners that win regional or state awards will only receive one check for the top prize.

RULES

1. Kentucky students grades 6-12 are eligible to compete in the writing contest. Students up to grade 5 may compete in the art contest.
2. A student may not enter both the art contest and the writing contest during the same year.
3. An entry must be created by one and only one student. Any entry submitted by more than one student will be disqualified.
4. All entries become the property of the contest sponsors. The decisions of the judges at all levels of competition are final.
5. Top three writing entries and/or artworks from your school must be submitted to your local county conservation district by Dec. 1, 2025.
6. ARTWORK: Student entries shall be 8 ½" X 11". Entries may be digital or submitted on any color or thickness of paper, such as cardstock, art paper, or printer paper. All artwork must be two-dimensional (2-D). Three-dimensional (3-D) artwork will not be accepted. Artwork may be rendered in any medium: pencil, ink, charcoal, pastel, crayon, paint, photography, etc. Mixed media and collage work is acceptable as long as all pieces are securely glued to the surface of the work. All entries must convey at a glance an accurate understanding of the information provided in the tabloid, the theme of the competition, and persuade the viewers of the need for good water conservation practices. All entries must be the original work of the student.
7. WRITING: Entry may not exceed 1,000 words and must be written in ink or typed on one side of paper only. No photographs or artwork may be included with the written work. The written entry should demonstrate an accurate understanding of the information provided in the tabloid and inform the reader about water conservation. Students should write from the perspective of an informed writer to a less informed reader and may be in the form of a letter, article, editorial or speech. The work

should be from the student author and avoid plagiarism from this source or other sources. ALL sources should be reputable and cited appropriately.

8. The entry form to the right must be completed and attached to your entry.

HELPFUL HINTS

- Keep entry simple and sincere.
- Be creative and original. Avoid plagiarism by using original words and ideas. Plagiarism is defined as the act of stealing and passing off the words of another as your own without crediting the source.
- Consider an area of water conservation that is important to you, your family and your community.
- Draw from your personal interests or experiences.
- Writing entry should take the form of informational.
- Think about aquatic issues in your community, farm, subdivision or city.
- DO NOT use this tabloid as your only source.
- Interview people in your community about changes in aquatic issues.
- Find ways to improve aquatic issues in your community. TAKE ACTION!

POINT SYSTEM FOR ART

- 50 points - Purpose/Audience. (Appropriate communication style to reach audience, establishes and maintains a purpose; and holds to subject in community. Theme clearly conveyed at a glance.)
- 30 points - Composition/creativity/craftsmanship. (Layout, originality, and quality of work, such as neatness.)
- 20 points - Language/correctness. (Word choice, usage, spelling, punctuation, capitalization.)

POINT SYSTEM FOR WRITING

- 30 points: Purpose/Audience (establishes and maintains a purpose, communicates with audience, employs a suitable tone)
- 20 points: Organization (logical order, coherence, transition organizational signals)
- 20 points: Idea Development/Support and Evidence of Research (student's original work shows sources of research, sources are cited)
- 30 points: Correctness (spelling, punctuation, capitalization), Language (word choice, usage), Sentences (varied in structure and length, constructed effectively, complete and correct)

ENTRY FORM

Name:

Parent's Name:

Home Address:

City:

Zip:

Home Phone:

Age:

Grade:

Teacher:

County:

School:

School Phone:

☐I hereby certify that I have read the rules and helpful hints and this entry is the original work of:

Student Signature (required):

Parent/Guardian Signature (required):

Teacher or Principal Signature (required):