**Earth Day resource guide**

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**History of Earth Day**

The information below was retrieved from:

EPA. (June 24, 2022). EPA History: Earth Day. Retrieved from: https://www.epa.gov/history/epa-history-earth-day

The First Earth Day in April 1970

It may be hard to imagine that before 1970, a factory could spew black clouds of toxic smoke into the air or dump tons of toxic waste into a nearby stream, and that was perfectly legal. They could not be taken to court to stop it.

How was that possible? Because there was no EPA, no Clean Air Act, no Clean Water Act. There were no legal or regulatory mechanisms to protect our environment.

In spring 1970, Senator Gaylord Nelson created Earth Day as a way to force this issue onto the national agenda. Twenty million Americans demonstrated in different U.S. cities, and it worked! In December 1970, Congress authorized the creation of a new federal agency to tackle environmental issues, the U.S. Environmental Protection Agency.

**ORIGINS OF EARTH DAY**

Additional information about Earth Day’s history from Earth Day.org. The following information was retrieved from:

Earthday.org. About Us. (June 30, 2022). Retrieved from: https://www.earthday.org/history/

In the decades leading up to the first Earth Day, Americans were consuming vast amounts of leaded gas through massive and inefficient automobiles. Industry belched out smoke and sludge with little fear of the consequences from either the law or bad press. Air pollution was commonly accepted as the smell of prosperity. Until this point, mainstream America remained largely oblivious to environmental concerns and how a polluted environment threatens human health.

However, the stage was set for change with the publication of Rachel Carson’s New York Times bestseller Silent Spring in 1962. The book represented a watershed moment, selling more than 500,000 copies in 24 countries as it raised public awareness and concern for living organisms, the environment and the inextricable links between pollution and public health.

Earth Day 1970 would come to provide a voice to this emerging environmental consciousness, and putting environmental concerns on the front page.

The Idea for the First Earth Day

Senator Gaylord Nelson, the junior senator from Wisconsin, had long been concerned about the deteriorating environment in the United States. Then in January 1969, he and many others witnessed the ravages of a massive oil spill in Santa Barbara, California. Inspired by the student anti-war movement, Senator Nelson wanted to infuse the energy of student anti-war protests with an emerging public consciousness about air and water pollution. Senator Nelson announced the idea for a teach-in on college campuses to the national media, and persuaded Pete McCloskey, a conservation-minded Republican Congressman, to serve as his co-chair. They recruited Denis Hayes, a young activist, to organize the campus teach-ins and they choose April 22, a weekday falling between Spring Break and Final Exams, to maximize the greatest student participation.

Recognizing its potential to inspire all Americans, Hayes built a national staff of 85 to promote events across the land and the effort soon broadened to include a wide range of organizations, faith groups, and others. They changed the name to Earth Day, which immediately sparked national media attention, and caught on across the country. Earth Day inspired 20 million Americans — at the time, 10% of the total population of the United States — to take to the streets, parks and auditoriums to demonstrate against the impacts of 150 years of industrial development which had left a growing legacy of serious human health impacts. Thousands of colleges and universities organized protests against the deterioration of the environment and there were massive coast-to-coast rallies in cities, towns, and communities.

Groups that had been fighting individually against oil spills, polluting factories and power plants, raw sewage, toxic dumps, pesticides, freeways, the loss of wilderness and the extinction of wildlife united on Earth Day around these shared common values. Earth Day 1970 achieved a rare political alignment, enlisting support from Republicans and Democrats, rich and poor, urban dwellers and farmers, business and labor leaders. By the end of 1970, the first Earth Day led to the creation of the United States Environmental Protection Agency and the passage of other first of their kind environmental laws, including the National Environmental Education Act, the Occupational Safety and Health Act, and the Clean Air Act. Two years later Congress passed the Clean Water Act. A year after that, Congress passed the Endangered Species Act and soon after the Federal Insecticide, Fungicide, and Rodenticide Act. These laws have protected millions of men, women and children from disease and death and have protected hundreds of species from extinction.

1990: Earth Day Goes Global

As 1990 approached, a group of environmental leaders approached Denis Hayes to once again organize another major campaign for the planet. This time, Earth Day went global, mobilizing 200 million people in 141 countries and lifting environmental issues onto the world stage. Earth Day 1990 gave a huge boost to recycling efforts worldwide and helped pave the way for the 1992 United Nations Earth Summit in Rio de Janeiro. It also prompted President Bill Clinton to award Senator Nelson the Presidential Medal of Freedom — the highest honor given to civilians in the United States — for his role as Earth Day founder.

Earth Day for a New Millennium

As the millennium approached, Hayes agreed to spearhead another campaign, this time focused on global warming and a push for clean energy. With 5,000 environmental groups in a record 184 countries reaching out to hundreds of millions of people, Earth Day 2000 built both global and local conversations, leveraging the power of the Internet to organize activists around the world, while also featuring a drum chain that traveled from village to village in Gabon, Africa. Hundreds of thousands of people also gathered on the National Mall in Washington, DC for a First Amendment Rally.

30 years on, Earth Day 2000 sent world leaders a loud and clear message: Citizens around the world wanted quick and decisive action on global warming and clean energy.

Earth Day 2010

As in 1970, Earth Day 2010 came at a time of great challenge for the environmental community to combat the cynicism of climate change deniers, well-funded oil lobbyists, reticent politicians, a disinterested public, and a divided environmental community with the collective power of global environmental activism. In the face of these challenges, Earth Day prevailed and EARTHDAY.ORG reestablished Earth Day as a major moment for global action for the environment.

Over the decades, EARTHDAY.ORG has brought hundreds of millions of people into the environmental movement, creating opportunities for civic engagement and volunteerism in 193 countries. Earth Day engages more than 1 billion people every year and has become a major stepping stone along the pathway of engagement around the protection of the planet.

Earth Day Today

Today, Earth Day is widely recognized as the largest secular observance in the world, marked by more than a billion people every year as a day of action to change human behavior and create global, national and local policy changes.

Now, the fight for a clean environment continues with increasing urgency, as the ravages of climate change become more and more apparent every day.

As the awareness of our climate crisis grows, so does civil society mobilization, which is reaching a fever pitch across the globe today. Disillusioned by the low level of ambition following the adoption of the Paris Agreement in 2015 and frustrated with international environmental lethargy, citizens of the world are rising up to demand far greater action for our planet and its people.

**The Origins of EPA**

The information below was taken directly from:

EPA. (June 24, 2022). The Origins of EPA. Retrieved from:

https://www.epa.gov/history/origins-epa

The American conversation about protecting the environment began in the 1960s.  Rachel Carson had published her attack on the indiscriminate use of pesticides, *Silent Spring*, in 1962.  Concern about air and water pollution had spread in the wake of disasters.  An offshore oil rig in California fouled beaches with millions of gallons of spilled oil. Near Cleveland, Ohio, the Cuyahoga River, choking with chemical contaminants, had spontaneously burst into flames.  Astronauts had begun photographing the Earth from space, heightening awareness that the Earth’s resources are finite.

In early 1970, as a result of heightened public concerns about deteriorating city air, natural areas littered with debris, and urban water supplies contaminated with dangerous impurities, President Richard Nixon presented the House and Senate a groundbreaking 37-point message on the environment.

These points included:

* Requesting four billion dollars for the improvement of water treatment facilities
* Asking for national air quality standards and stringent guidelines to lower motor vehicle emissions
* Launching federally-funded research to reduce automobile pollution
* Ordering a clean-up of federal facilities that had fouled air and water
* Seeking legislation to end the dumping of wastes into the Great Lakes
* Proposing a tax on lead additives in gasoline
* Forwarding to Congress a plan to tighten safeguards on the seaborne transportation of oil
* Approving a National Contingency Plan for the treatment of oil spills.

Around the same time, President Nixon also created a council in part to consider how to organize federal government programs designed to reduce pollution, so that those programs could efficiently address the goals laid out in his message on the environment.

Following the council’s recommendations, the president sent to Congress a plan to consolidate many environmental responsibilities of the federal government under one agency, a new Environmental Protection Agency.  This reorganization would permit response to environmental problems in a manner beyond the previous capability of government pollution control programs:

1. The EPA would have the capacity to do research on important pollutants irrespective of the media in which they appear, and on the impact of these pollutants on the total environment.
2. Both by itself and together with other agencies, the EPA would monitor the condition of the environment--biological as well as physical.
3. With these data, the EPA would be able to establish quantitative "environmental baselines"--critical for efforts to measure adequately the success or failure of pollution abatement efforts.
4. The EPA would be able--in concert with the states--to set and enforce standards for air and water quality and for individual pollutants.
5. Industries seeking to minimize the adverse impact of their activities on the environment would be assured of consistent standards covering the full range of their waste disposal problems.
6. As states developed and expanded their own pollution control programs, they would be able to look to one agency to support their efforts with financial and technical assistance and training.

After conducting hearings during that summer, the House and Senate approved the proposal. The agency’s first Administrator, William Ruckelshaus, took the oath of office on December 4, 1970.

**Fact sheets from Earth Day.org**

You can share some of the information from the following fact sheets with your group members. The sheets are available from this website: https://www.earthday.org/factsheets/

**Fact Sheet: Food Systems and Climate Change**

https://www.earthday.org/food-systems-and-climate-change-fact-sheet/

Global demand for meat is projected to rise 50% in the next 25 years putting a strain on our ecological systems. Shifting away from animal-based foods is a solution to the climate crisis we are facing.

Fact #1: An estimated 1,800 gallons of water go into a single pound of beef. With that much water you could take 105 eight-minute showers a day!

Fact #2: Food is the cause of 30% of all carbon emissions

Fact #3: Beef produces the most greenhouse gas emissions, which include methane. A global average of 110lb (50kg) of greenhouse gases is released per 3.5oz of protein.

Fact #4: Beef requires 20 times more land and emits 20 times more GHG emissions per gram of edible protein than common plant proteins, such as beans.

Fact #5: Raising animals for food takes up half of all water used in the U.S.

Fact #6: Animal agriculture takes up land and is a leading cause of deforestation. In 2018, 30 million acres of tropical rainforest were lost. Which is equivalent of 43 football fields a minute!

Fact #7: Plant-based meat uses 72%–99% less water than conventional meat (l-water/kg-meat).

Fact #8: Methane, a greenhouse gas, has over 25 times the impact on our planet as carbon dioxide over a 100-year period. According to the US Environmental Protection Agency, the largest contributor of methane in the US is livestock and their waste.

Fact #9: Plant-based meat requires no antibiotics at all. It also greatly reduces the risk of antifungal resistance, which can arise from the use of fungicides on crops, because plant-based meat requires much less crop production than conventional meat.

Fact #10: Producing animal-based foods generates more greenhouse gas emissions than plant-based foods, which is why shifting toward a more plant-based or plant-forward diet is recognized as a solution for for curbing greenhouse gas emissions and addressing climate change.

Fact #11: 1 gallon of cow’s milk requires 1950 gallons of water.

Fact #12: One recent study by the United Nations Food and Agriculture Organization concluded that, on average, it takes about three pounds of grain to raise one pound of meat.

Fact #13: Livestock contributes nearly 2/3 of agriculture’s greenhouse & 78% of its methane emissions.

Fact #14: It takes more than 11 times as much fossil fuel to make one calorie from animal protein as it does to make one calorie from plant protein.

**Fact Sheet: How Much Disposable Plastic We Use**

https://www.earthday.org/fact-sheet-how-much-disposable-plastic-we-use/

The billions upon billions of items of plastic waste choking our oceans, lakes, and rivers and piling up on land are more than unsightly and harmful to plants and wildlife.

The following 8 facts shed light on how plastic is proving dangerous to our planet, health, and wildlife. To learn more about the threat and impact of plastic pollution and get tips to reduce your plastic consumption, download our Plastic Pollution Primer and Toolkit and use our Plastic Pollution Calculator today!

An estimated 583 billion plastic bottles were produced in 2021. That is 100 billion more than were produced just five years ago.[1]

This year, five trillion plastic bags will be used. That’s 160,000 every second![2]

Americans alone use half a billion drinking straws every day.[3]

In 2017, packaging production constituted the highest-demanded use for plastic, with 146 million metric tons used.[4]

The amount of single-use plastics used globally has tripled since the start of the pandemic, with takeout orders driving the increase.[5]

Each year, enough Bubble Wrap is created globally to cover the distance between the earth and the moon.[6]

In the U.S., we throw away more than 50 billion coffee cups every year. These are coated with plastic to laminate the inside and use plastic lids.[7]

Around the world, people litter more than 4.5 trillion cigarette butts every year.[8]

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**Fact Sheet: Microplastics and Drinking Water**

https://www.earthday.org/fact-sheet-microplastics-and-drinking-water/

The billions upon billions of items of plastic waste choking our oceans, lakes, and rivers and piling up on land is more than unsightly and harmful to plants and wildlife. Plastic Pollution is a very real and growing threat to human health.

The following 10 facts shed light on how plastic is proving dangerous to human health. To learn more about the threat and impact of plastic pollution and get tips to reduce your plastic consumption, download our Plastic Pollution Primer and Toolkit today!

According to a study conducted by Orb Media on plastics and tap water, 83% of tested water samples from major metropolitan areas around the world were contaminated with plastic fibers. Plastic fibers were also found in bottled water produced by 11 of the world’s largest brands purchased from 19 locations in 9 countries.[1] 93% of bottled water showed some sign of microplastic contamination, including polypropylene, nylon, and polyethylene terephthalate (PET).[2]

Each year, about 1 million tons of tiny plastic fibers are released into wastewater.[3]

In 2015, the US passed the Microbead-Free Waters Act, banning plastic microbeads in cosmetics and personal care products sold in the United States. Critically, there are no regulatory limits on the levels of microplastics in bottled water.[4]

A single fleece jacket sheds up to 250,000 microfibers during a single wash.[5] Microfibers from synthetic fibers have been shown to make up the majority of human material found along the world’s shorelines, accounting for up to as much as 85% of the total.[6]

Microplastics can also come from car tires. Plastic dust is created by the friction between the wheels and the road and is blown into waterways by the wind. Car tires shed 20 grams of plastic dust every 100 kilometers. Microplastics can also come from car tires. Plastic dust is created by the friction between the wheels and the road and is blown into waterways by the wind. Car tires shed 20 grams of plastic dust every 100 kilometers.[7]

**Fact Sheet: Plastics in the Ocean**

https://www.earthday.org/fact-sheet-plastics-in-the-ocean/

The billions upon billions of items of plastic waste choking our oceans, lakes, and rivers and piling up on land is more than unsightly and harmful to plants and wildlife.

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Every minute, two garbage trucks of plastic are dumped into our oceans. Currently, 8 million metric tons of plastic winds up in the oceans.[1] That’s enough trash to cover every foot of coastline around the world with five full trash bags of plastic…compounding every year.[2] The amount of plastic trash that flows into the oceans every year is expected to nearly triple by 2040 to 29 million metric tons.[3]

Microplastics in different forms are present in almost all water systems in the world, be they streams, rivers, lakes, or oceans.[4][5][6] There is more microplastic in the ocean than there are stars in the Milky Way.[7]

There are five massive patches of plastic in the oceans around the world. These huge concentrations of plastic debris cover large swaths of the ocean. One patch in particular, known as the “Great Pacific Garbage Patch” covers 20 million square kilometers of water.[8] That’s bigger than the combined area of the United States’ five largest states![9]

By 2050 there will be more plastic in the oceans than there are fish (by weight).[10]

As of 2021, there are at least 363,762,732,605 pounds of plastic pollution in the world’s oceans.[11]

Plastic has been found at 36,000 feet (approximately 11km) in the Mariana Trench, meaning not even the deepest part of the world’s oceans can escape contamination.[12]

Over 1 million marine organisms are killed each year due to plastic pollution in the ocean. Animals who eat plastic often starve because the plastic prevents them from properly swallowing food.[13]

The chances of disease on a coral reef are enhanced by 22-fold by plastics. In 2018, a huge survey of the 159 coral reefs across Asia-Pacific region showed that over 11.1 billion plastic particles are entangling the corals, and this number is estimated to increase dramatically by 40% by 2025. Plastic debris may also cause physical damage to the corals by exhausting the resources for the wound-healing process. Importantly, more than 7000 species of fishes, invertebrates, plants, sea turtles, birds, and marine mammals can be found in the coral reef ecosystem.[14]

Animals are now colonizing the Great Pacific Garbage Patch, meaning that they are consuming the plastic waste and also living in previously uninhabited areas. All of these developments disrupt the natural marine ecosystem.[15]

Many animals at the base of the food chain eat microplastics. These animals are then consumed by others than humans eat.[16]

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**Fact Sheet: The Plastic Threat to Human Health**

https://www.earthday.org/fact-sheet-the-plastic-threat-to-human-health/

The billions upon billions of items of plastic waste choking our oceans, lakes, and rivers and piling up on land is more than unsightly and harmful to plants and wildlife. Plastic Pollution is a very real and growing threat to human health.

The following 10 facts shed light on how plastic is proving dangerous to human health. To learn more about the threat and impact of plastic pollution and get tips to reduce your plastic consumption, download our Plastic Pollution Primer and Toolkit today!

A National Health and Nutrition Examination Survey produced by the US Centers for Disease Control and Prevention concluded that BPA was found in 93% of urine samples taken from people above the age of six.[1]

Bisphenol A also known as BPA,[2] used to make billions of plastic beverage containers, dinnerware, protective linings of food cans and toys, is considered an endocrine disruptor, meaning it can both decrease or increase endocrine activity in humans and cause adverse health effects.[3] Based on the weight of existing evidence, it is likely that elevated urinary BPA levels are associated with prostate cancer in humans and may be an independent diagnostic marker in prostate cancer patients.[4] Importantly, the label BPA-free in a container of a bottle doesn’t mean a product is free from other harmful chemical compounds that are slightly different but have a different name.[5]

Some animal studies have indicated adverse effects of BPA on newborns and fetuses.[6]

Breast milk of most women in the developed world contains dozens of compounds including BPA that have been linked to negative health effects.[7]

Growing literature links many Phthalates,[8] which are a group of chemicals used to make plastics more flexible and harder to break, with a variety of adverse outcomes including weight gain and insulin resistance, decreased levels of sex hormones, and other consequences for the human reproductive system both for females and males.[9]

When food is wrapped in plastic containing BPA, phthalates may leak into the food. Any migration is likely to be greater when in contact with fatty foods such as meats and cheeses than with other foods.[10]

In general, it is not recommended to heat food in plastic containers with the codes 3 and 7. The USDA Food Safety and Inspection Service advises Americans not to reuse margarine tubs, take-out containers, whipped topping bowls, and other one-time use containers, which are more likely to melt and cause chemicals to leach into food.[11]

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**Articles**

**Article 1:**

Earth Day Activities to Span 2 Weeks. By Paul Raupp. (April 2, 1990). Owensboro Messenger-Inquirer. Retrieved from the NewsBank database

For Owensboro organizers of Earth Day 1990, 24 hours didn't seem like enough time to celebrate the 20th anniversary of an event that stirred America's environmental conscience.

Instead of limiting the celebration to a single day, organizers lined up two weeks of activities leading up to the April 22 event.

''We're really trying to emphasize that it's time to move away from celebrating one day out of the year to becoming much more environmentally concerned every day of the year,'' said Bruce Beck, co-coordinator of Owensboro's Earth Day activities.

Those activities will begin at 8:30 a.m. April 7 with an Arbor Day tree giveaway scheduled for the English Park picnic shelter. Up to five seedlings per person are available, along with some free planting advice.

In subsequent weeks, more than a dozen other events - from educational programs to hot air balloon rides and a rock concert - have been scheduled, culminating in a full-blown Earth Day celebration on April 22 at Kentucky Wesleyan College.

Beginning at 1 p.m. that day, an Earth Day 1990 Walk will lead marchers from Owensboro High School to Wesleyan's South Lawn, where about 40 booths manned by various civic groups and community businesses will serve up information about the environment.

''I've never seen Daviess County really get behind anything like this to this degree,'' Beck said. ''Almost all of our civic groups and a lot of other organizations will be represented there.'' Music, drama, dance and concessions also on are the agenda for that event, and large recyling bins will be available for newspaper, glass and aluminum cans.

''That just seems like a natural extension of what we're trying to do,'' said Beck, an anthropology professor at Owensboro Community College who has handled the academic side of Owensboro's Earth Day 1990 planning.

Included in the plans are lectures from various experts on water, air and rain forests. The lectures will be held on April 17, 18 and 19, respectively, from 7 to 9 p.m. in OCC's Humanities Building Lecture Hall.

Other organizations have been active in Earth Day planning as well, including the city's Parks and Recreation Department, which is sponsoring the seedling giveaway and is participating in other events focusing on local elementary school students.

''The interest has really started rolling, and we're trying to help out as much as we can,'' said Lisa Adams, a recreation supervisor for the department.

Meanwhile, members of the Owensboro-based environmental group Protecting Our Lives And Resources (POLAR) have put their organizational skills into the local Earth Day activities as well.

Activities co-coordinator Marie Roberts said POLAR, which was created after last year's Earth Day celebration as a way to increase year-round environmental awareness, wanted to provide focus and continuity for the various Earth Day 1990 activities.

''There's just so much interest in Earth Day this year that we felt like what was needed was for it to be organized and promoted as one event,'' she said.

That philosophy fits nicely into the purpose of POLAR.

''We want to educate the public and ourselves, and that's a long-term process,'' she said. ''We want people to do what they can to make changes in their lives and start protecting the environment. That's what Earth Day is all about.''

**Article 2:**

[20 YEARS HAVE SEEN SOME GOOD, SOME BAD COME TO STATE'S WILDLIFE](https://urldefense.com/v3/__https%3A/infoweb-newsbank-com.kdla.idm.oclc.org/apps/news/openurl?ctx_ver=z39.88-2004&rft_id=info*3Asid*infoweb.newsbank.com&svc_dat=AWNB&req_dat=0FE4F651FB001EB3&rft_val_format=info*3Aofi*fmt*3Akev*3Amtx*3Actx&rft_dat=document_id*3Anews*252F0EB73C45E8408AF9__;JS8lLyUlJSUl!!Db6frn15oIvDD3UI!hx-YSnltUrEL-3msDObNRj_PbucnvEVOFlhCuJ1hJQt5FyO5pgd_KQTlAeRflO0cIeRE-bz_42HTsjds4XA_0EDi6CRp$). By Art Lander, Jr. ( April 22, 1990). Lexington Herald-Leader. Retrieved from the NewsBank database.

On Earth Day 1970 we were campus activists who wore green arm bands to class and "Save the Earth" buttons on our T-shirts.

We all wanted to find a way to help our planet recover from the ravages of pollution.

I'm proud I took part in the first Earth Day. There was a tremendous sense of purpose and belonging among those of us who joined the activities at Western

Kentucky University. It was a wonderful feeling working together to make people aware of problems with our land, water, air and wildlife.

We still have many of the same pollution problems 20 years later. We have a better understanding of the causes, but that hasn't necessarily led to a solution.

Looming on the horizon are some even more disturbing problems for our planet that we didn't fully understand the importance of 20 years ago. It will take another surge of grass-roots environmental activism, like what prompted the first Earth Day, and long-term, deep personal commitment, to meet the challenge of the many environmental ills we face.

In Kentucky there has been as much good news as bad about the fish and wildife in our environment. Here is a look at a few things that have happened since the first Earth Day, and some thoughts on the outlook for the future:

Bald eagle comeback

The bald eagle has made a tremendous comeback.

Bald eagles are nesting at several locations around Kentucky, and wintering populations have risen dramatically since the 1960s, when biologists discovered that the pesticide DDT was responsible for the bird's reproductive problems.

This spring at the Ballard Wildlife Management Area, west of Paducah, there are two eagles nests with eggs, and biologists believe some of the eggs may have hatched.

Bald eagles have successfully raised young in Land Between the Lakes, and the future looks good for nesting in other parts of the state.

Other birds of prey have also recovered from serious declines. Osprey have built at least three nests in Kentucky this spring, and there are plans to release peregrine falcons in Daniel Boone National Forest in hopes of establishing a breeding population there.

On the down side, a proposed lock and dam project on the Ohio River has biologists worried that noise and construction will hurt eagle nesting at the Ballard WMA.

The project would replace two antiquated dams.Construction would take 13 years and cost about $990 million.

The project, which is now in the design and engineering phase, could pose a threat to nesting eagles because numerous pilings would have to be driven into the riverbed. Nesting eagles are very sensitive to human interference and loud noise.

Biologist think that lights used to illuminate the construction site at night could disorienate migrating waterfowl and that construction of the new dam could disturb beds of endangered mussels in the river.

At the peak of migration, as many as 125,000 Canada geese winter at the Ballard WMA.

"We are re-evaluating the environmental impact of the project," said project manager Dave Weyer f the U.S. Army Corps of Engineers. "It's one of those evolving situations we'll have to watch. Eagles weren't nesting in the area when the project was first planned."

Endangered species

Endangered and threatened species have gotten more attention from biologists since 1970, and funding for research, while still woefully low, has increased considerably.

Kentucky now has a tax check-off program that lets state taxpayers give money to non-game wildlife programs and research.

John MacGregor, non-game biologist for the Kentucky Department of Fish and Wildlife Resources, said a statewide breeding bird atlas is almost complete.

"It's taken five years for us to get the information together . . . the distribution and location of the various bird species," MacGregor said. "A small mammal and bat cave inventory is also being done."

Just a decade ago, census and inventory work on plants and animals was usually done on a local basis by biology professors or biologists, with limited access to the information that was compiled.

Now, information on all of Kentucky's plants and animals is available through a centralized data base in Frankfort, allowing information to be easily retrieved for use in environmental impact statements, to help biologists answer landowner questions and for teachers to use in school programs.

There are five plants and 29 animals in Kentucky on the federal endangered or threatened list, including 15 mussels.

"Mussels are a barometer to water quality," MacGregor said. "A die-off of mussels can make you aware of a pollution problem you didn't know you had."

Poor water quality and dams, which change the flow of rivers, are responsible for the endangered or threatened status of the mollusks.

MacGregor said he thought acid rain and the expanding human population were two problems facing endangered species. "Every person takes up space and resources and intrudes into habitat," he said. "But I think things are on the upswing."

There are more than 4,000 species on the list of candidates for federal endangered species status.

Better fishing

Fishing opportunities in Kentucky have increased because of:
an overall increase in water quality because of tougher sewage pollution laws, decreased siltation because of more responsible surface mining, vigorous stocking programs.

Many species of fish have been re-established in their native habitat and at least two non-native species -- the landlocked striped bass and brown trout -- have done well after being stocked in the state. A wild trout program has re-established self-sustaining populations of brook trout in some mountain streams, and muskie and walleye are now found in rivers where they were native, but were all but wiped out.

Only one species of fish, the blackside dace, which is native to the upper Cumberland River, is on the federal endangered or threatened list in Kentucky.

The bad news is that toxic wastes are threatening our lakes and rivers. Fish consumption advisories have been issued for several rivers.

Channel catfish, carp and white bass caught from the entire length of the Ohio River should not be eaten because of health risks from polychlorinated biphenyl (PCB) contamination.

The administration's push to locate heavy industry in rural areas to create jobs and bolster the economy is bound to increase the risk of further contamination as more and more factories are built.

More deer and turkey

The last 20 years have seen a huge increase in the state's white-tailed deer herd and wild turkey flock.

On the other hand, thousands of acres of wetlands have been drained,

destroying valuable habitat for unique plants and animals and wintering areas for ducks and geese. Kentucky has lost an estimated 80 percent of its wetlands.

Public demand for land for fishing, hunting and outdoor recreation is at an all-time high and there's much concern about meeting future needs.

Little money has been earmarked for land acquisition in Kentucky, and the state is far behind surrounding states in preserving natural areas.

Less than 1 percent of the state is thought to be in its natural state, unchanged by man since settlement.

One of the state's great natural treasures, Swan Lake, a 700-acre cypress slough near the confluence of the Ohio and Mississippi rivers, was bought by the Kentucky Department of Fish and Wildlife Resources in the late 1980s. The lake and surrounding lands are now a wildlife management area and refuge.

In this past session of the Kentucky General Assembly, lawmakers passed a bill establishing the Kentucky Heritage Land Conservation Fund, but funding for the program was gutted by a Senate committee. In fact, the version of the bill signed by the governor doesn't provide one penny to buy land. Proponents of the fund hope to get money in future legislative sessions.

The one bright note concerning land acquisition is that the Kentucky State Nature Preserves Commission received a $600,000 appropriation from the

Kentucky General Assembly. It was the first time the agency had ever attempted to get money from the legislature for land acquistion, director Richard Hannan said.

"Twenty years ago people weren't talking about natural areas, plant and animal diversity and endangered species," Hannan said. "In the next 20 years they're going to have to put their money where their mouth is."

Established in 1976, the Kentucky State Nature Preserves Commission now owns or manages 5,700 acres in 18 nature preserves.

**Article 3:**

Spring Cleanup a Huge Success. By Janie Slaven. (June 1, 2022). The Commonwealth-Journal. Retrieved from the NewsBank database.

Pulaski County got to show off its best side as the summer tourism season got underway thanks to a hugely successful Spring Cleanup.

The annual series of events takes place each April, spearheaded by Eastern Kentucky PRIDE (Personal Responsibility In a Desirable Environment) in partnership with various community agencies in the counties PRIDE covers.

Local efforts were recognized during last week's meeting of Pulaski County Fiscal Court by County Recycling/Solid Waste Coordinator Danny Masten, who also serves as Pulaski's PRIDE Coordinator. The report earned the collective kudos from magistrates, as voiced by District 3 Magistrate Jimmy Wheeldon.

"I would like to say I appreciate your role and what you do, and all the people that help," Wheeldon said.

The cleanup kicked off with a waste tire collection event that brought in 71,804 tires. Masten called it one of the biggest collections the county has had and noted that another event won't be held locally for three years but that tire amnesties are open to any Kentucky resident regardless of what county they live in.

Next up was the Pulaski Clean Sweep on April 14, focusing on highways such as US 27.

"We had 128 businesses participate," Masten said, adding that "367 volunteers cleaned up 405 bags of trash on that one day alone."

During the week of April 18 and leading into Earth Day on April 22, local students participated in the Triple Bag Challenge -- a social media campaign in which students pick up three bags of litter in an area of their choice and then post before and after pictures. Masten reported that 11 were awarded prizes for their efforts in the challenge, which is sponsored by SPEDA (Somerset Pulaski Economic Development Authority), Somerset Tourism, Lake Cumberland Tourism and Pulaski County Solid Waste/Recycling Center.

April 22-23 saw the 2nd Annual Operation Beautification, with participation from 22 school and youth organizations. According to Masten, 461 volunteers picked up litter along 74 road miles and collected 765 bags of trash. Operation Beautification is a partnership of the Somerset-Pulaski County Chamber of Commerce, SPEDA, Pulaski County Solid Waste/Recycling Center, Lake Cumberland Regional Hospital, Hinkle Contracting, Somerset Hardwood Flooring, Ford Brothers Auctioneers, Mindy Sweet and the Johnson Family.

The spring cleanup wrapped April 30 with a Household Hazardous Waste collection event at the Pulaski County Recycling Center with 202 cars dropping off items.

Masten also reported on the most recent grants that his department has received from the Kentucky Pride Fund -- a $344,792.33 recycling grant and a $200,000 composting grant.

The recycling grant, Masten said, will be used to replace old equipment which will allow one of the old forklifts to be transferred to the Fleet Maintenance Department.

"This will save the county a lot of money," he said. "These forklifts aren't cheap. We'll be able to donate that to them, and they'll have safer equipment over there to move stuff around."

The department is still awaiting word on whether it will be awarded a rubber-modified asphalt grant to pave a portion of Bourbon Road. "Hopefully we'll know something about it within the next month," Masten said.

The solid waste coordinator closed his presentation by thanking Fiscal Court for their support as well as the community for volunteering in cleanup events.

"Pulaski County is in one of the best spots that we've ever been in as far as the way our community takes care of itself," Masten said, also adding his gratitude to the Pulaski County Detention Center's litter crew. "…I just encourage people to continue to keep Pulaski County green and clean."

**Article 4:**

Richmond Parks Celebrates Earth Day at Camp Catalpa. By Taylor Six. (April 26, 2022). The Richmond Register. Retrieved from the NewsBank database.

The Richmond Parks and Recreation Department celebrated Earth Day at Camp Catalpa on Saturday.

Many groups which center around preservation of natural areas were at the bird and nature sanctuary to give demonstrations, lead guided hikes and participate in outdoor activities in an effort to shine a light on sustainability and outdoor recreation possibilities.

Activities included tree climbing with EKU Department of Recreation and Park Administration, a camping workshop with Mike's Hike and Bike, sustainable fishing with Cain Pole, a guided hike, and several other booths dedicated to celebrating Earth Day.

One such booth was overseen by the Leave No Trace organization with Eastern Kentucky University, which gave awareness about how to leave natural areas as you found them when enjoying the outdoors.

As part of one activity, Leave No Trace brought a bear container with candy inside and asked participants to open it, so they could retrieve a prize. They also took a survey which asked what was most bothersome to participants when on a trail, such as loud music, tree carvings, litter, or people not cleaning up after their pets.

An additional booth was set up by participants in EKU's Natural Areas group, who had a table full of plastics, and asked individuals to pick out which items were recyclable, and which were not.

Lauren Kilburn, assistant program coordinator stated, "Now is the time to preserve and protect our neighborhoods, beaches, rivers, lakes, trails, and parks by reducing waste and plastic pollution, improving habitats, and preventing harm to wildlife and humans." These educational stations are designed to help raise awareness on the importance of investing in our planet."

**Programming ideas**

1. Litter clean-up

Supplies neededinclude: ‘grabber’ tools, disposable gloves, five- gallon buckets, and/or large trash bags.

\*\*Invite program attendees to walk around the library’s property (observing vehicles and safety) and pick up trash.

Idea borrowed from the following article.

Carlton, L. (November 12, 2018). 'Check Out' All the Creative Things Libraries Circulate. Programming Librarian. Retrieved from: https://programminglibrarian.org/articles/check-out-all-creative-things-libraries-circulate

2. Connect with your local Cooperative Extension Office, Department of Fish and Wildlife, and/or Waste Treatment facility to see if their staff can present on how to properly dispose of paint, chemicals, and/or electronics.

3. Create apple tree crafts out of used plastic bottles and lids.



Retrieved from: mungfali.com

Apple Tree Craft 679

https://www.pinterest.com/pin/148970700165370569/?mt=login

Supplies needed:

Plastic soda and/or water bottles with their lids, tissue paper, pipe cleaners, glue, cardboard or stock paper.

Put out the supplies and let people get creative making their apple trees. Glue the water bottle creation to the card stock or cardboard then display the upcycled artwork.

4. See the article above, “How-to-Festival: Earth Day Edition” for ideas.

5. Make a sensory bottle out of plastic water or soda bottles.

Preschool Inspirations. (June 2022) Making a Sensory Bottle. Retrieved from: https://preschoolinspirations.com/how-to-make-a-perfect-sensory-bottle/

**Making a Sensory Bottle**

Use a clean bottle when making your discovery bottle…otherwise, you may acquire some unwanted growth later on. I pour the water into a different cup, then rinse it out if it is a flavored water.

To remove the label and the sticky residue, you can use Goo Gone or even peanut butter. I’ve had my Goo Gone for at least five years, so a little goes a long way!

To color your bottle, I highly recommend liquid watercolor. You could use food coloring as well.

Liquid Ingredients

I love using liquid ingredients. These are all of the ones that I have used and what they are perfect for. Keep in mind that anything metallic or magnetic will rust if you don’t put it in the proper liquid.

* Water – Almost anything! Just don’t add magnets or anything metallic to this one or else it will rust.
* Colored Water – Just add some liquid watercolor or food coloring.
* Mineral Oil – This will slightly slow down whatever you have in your bottle. Items such as glitter will slow down a bit more. Mineral oil is also my “go to” solution for magnets and metallic items. Here’s my magnetic discovery bottle in mineral oil.
* Baby Oil – This is mostly scented mineral oil. It is available at the dollar store usually.
* Oil Dye – You’ll want to use this to color oil. Food coloring and liquid watercolor will not work since they are water-based.
* Cooking Oil – I love combining this with colored water!
* Liquid Soap – A nice slowing component. I use SoftSoap. Here is a calm down jar with liquid soap.
* Shampoo – This also slows the flow of objects.
* Glycerine– Glycerine will slow down things such as glitter slightly
* Corn Syrup
* Elmer’s Clear Glue – This is a great calm down jar ingredient and also great for slow-falling objects
* Elmer’s Glitter Glue– A little goes a long way! I advise that you only use this if you are very experienced with making sensory bottles because it can be a tricky glue to work with.
* Glitter Glue – Mix this with hot water for a beautiful bottle. I use the kind from the Dollar Store.
* Hair Gel
* Water Beads and Water
* Tonic Water
* Dish Soap – Use a squirt of this if you have glitter that won’t sink.

Dry Ingredients

* Magnets
* Fine Glitter
* Feathers
* Poly-Pellets Weighted Stuffing Beads.
* Confetti
* Acrylics
* Sand
* TOOB Animal Sets
* Googly Eyes
* Loom Bands
* Nature
* Mini Erasers – The dollar spot at Target is a gold mine for these.
* Perler Beads
* Pony Beads
* Pipe Cleaners or Chenille stems – These are magnetic so you can put a magnet on the side of the bottle to attract them.
* Beads – Nearly any bead looks great!
* Marbles
* Buttons
* Pom poms
* Holiday accents
* Sequins
* Shredded paper
* Scented items
* Small toys
* Dried Foods: Pasta, Rice, Beans, Split Peas, Dry Candy (conversation hearts)

Glue it Together

Once you’ve combined all of the ingredients together to make a perfect sensory bottle, it’s time to use the glue! I use a glue gun or Gorilla Super Glue. Keep in mind that you will need to glue your bottle every few months as the glue will wear off.

Sensory bottles can last years, so I never feel bad about indulging with them! I’d love to hear what your favorite sensory or discovery bottle is!

6. Share the following images from the Smithsonian Learning Lab resources with your group.

Cooper Hewitt, Smithsonian Design Museum, Smithsonian Institution. “Smithsonian Learning Lab Resource: Reimagining Industrial Waste: Scraps + Polyurethane.” Smithsonian Learning Lab, Smithsonian Office of Educational Technology, 30 Mar. 2018, https://learninglab.si.edu/q/ll-c/7N9f99Yd8LX2jgN0#r/327789

National Museum of American History, Smithsonian Institution. “Smithsonian Learning Lab Resource: Poster, "Give a Hoot! Don't Pollute".” Smithsonian Learning Lab, Smithsonian Office of Educational Technology, 30 Mar. 2018, https://learninglab.si.edu/q/ll-c/7N9f99Yd8LX2jgN0#r/327791