

**The 2009 Survey of Kentuckians’  
Environmental Knowledge,  
Attitudes and Behaviors**

Survey Conducted  
By

**The Kentucky Environmental Education Council  
and  
The University of Kentucky Survey Research Center**

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In 1995, the Kentucky Environmental Education Council (KEEC), a state agency, was established to improve environmental education in the Commonwealth. The General Assembly charged the agency with a number of tasks, one of which was to “monitor and report periodically on environmental literacy in Kentucky.” KEEC, working with the University of Kentucky Survey Research Center, completed the first survey of environmental knowledge, attitudes and behaviors in 1999 and the second in 2004. This report gives the results of the 2009 survey and compares it to the previous surveys.

As in the first two reports, this survey does not actually measure the environmental literacy of Kentuckians. Environmental literacy is so complex that it is difficult to define, let alone to measure. This survey, conducted by the UK Survey Research Center on a random sample of 634 Kentucky adults in the spring of 2009, is simply a snapshot of whether Kentuckians can answer some very basic questions about issues that deal with air, land and water quality. It also asks Kentuckians to share their attitudes about certain environmental issues, such as how well we are protecting our natural resources. Finally, it asks Kentuckians to identify whether or not they engage in behaviors that might improve their environment.

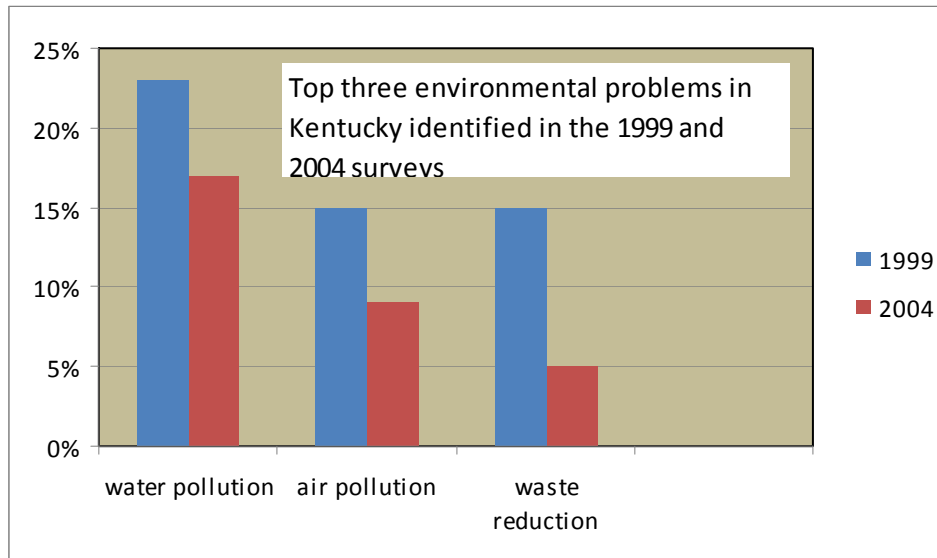
The first three sections of this document report on the knowledge, attitudes and self-reported behaviors of Kentuckians in general regarding the environment. The final section breaks down some of those questions by socioeconomic group. Please note that all percentages have been rounded to the nearest whole number for easier reading and that there is a margin of error of 4 percent at a 95 percent confidence level.

## ***Results of the Survey***

### **KNOWLEDGE**

The survey asked questions that measured Kentuckians’ knowledge of current environmental topics. The questions were designed to be very easy. These are questions that any middle school student should be able to answer and, as expected, the majority of respondents to the survey were able to answer many, though not all, questions correctly. However, a very significant minority – in many cases nearly half – of respondents were not able to give correct answers to some of these very basic questions.

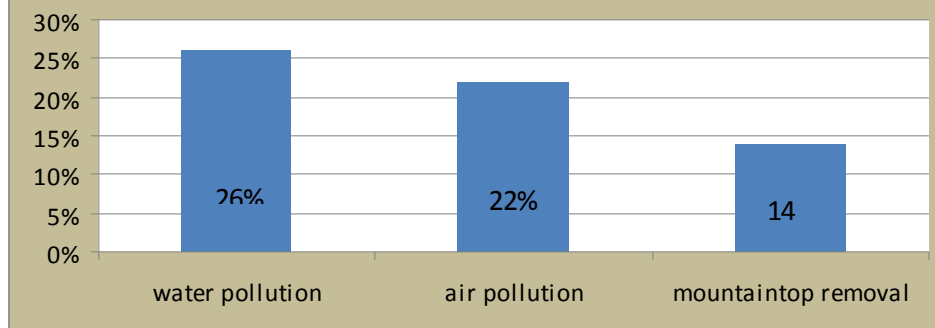
In 1999 and 2004, when asked to cite the most important environmental problem in Kentucky, most respondents simply identified “pollution.”: not citing a specific problem or issue. In this year’s survey, the percentage of respondents giving this general answer fell to only 5 percent, perhaps indicating a greater awareness of more specific environmental issues.



Among those who gave specific responses in 1999 and 2004, water pollution was named most often as the leading environmental problem in the Commonwealth. Water was also number one in the 2009 survey, coming in at 26 percent in the rankings for topics of most concern, as compared to 24 percent in 1999 and 17 percent in 2004. Though air pollution was ranked second in all three surveys, the number of people identifying air pollution as the number one problem rose rather dramatically from 9 percent in 2004 to 22 percent in 2009.

The most interesting finding for this question in the 2009 survey was that Kentuckians ranked mountaintop removal as third in environmental problems of most concern in the Commonwealth. This issue did not make it into the top rankings in either 1999 or 2004. However, in the latest survey, 14 percent of respondents named it as the most important environmental problem facing the Commonwealth perhaps reflecting increased interest in energy and environmental issues or in increased publicity around the subject. Another surprising finding in the 2009 survey, is that global warming, despite the media attention it has gotten in recent years, was ranked as the most important environmental problem in Kentucky by only 1 percent of respondents.

## Top three environmental problems in Kentucky identified in the 2009 survey

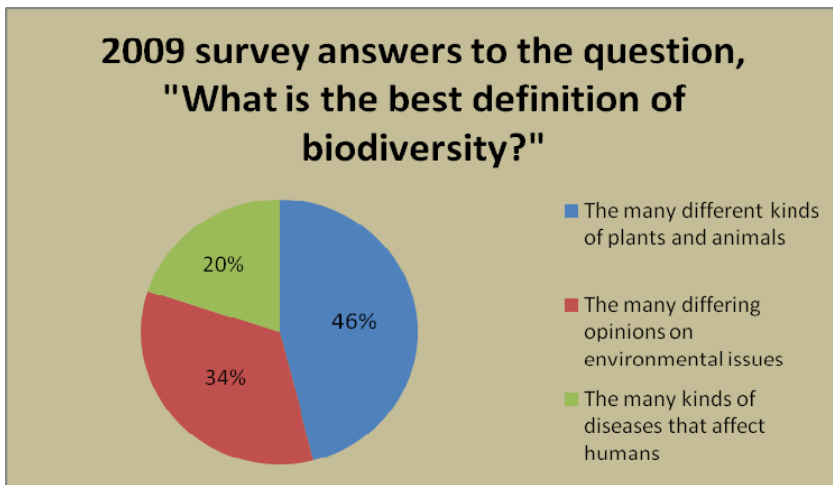


Though water pollution is identified as the leading environmental problem by those surveyed (mirroring national and worldwide surveys), the majority of Kentuckians are still unable to correctly identify runoff from fields, pavements and lawns as the leading source of water pollution in the Commonwealth. However, the number of respondents who do answer correctly has risen from 17 percent in 2004 to 28 percent in this year's survey; a significant improvement. In 2004, a whopping 56 percent incorrectly identified factory waste as the leading source of water pollution. Although that number has fallen to 49 percent in the 2009 survey, it still indicates a tenacious stereotype that is difficult to overcome.

When asked in 1999 and 2004 the major source of electricity generation in the U.S., only 49 percent of Kentuckians, less than half, correctly identified coal-burning power plants. This year, 60 percent answered this question correctly, indicating a jump in citizen knowledge of this issue. Most of the remainder, 37 percent, continues to identify nuclear or hydroelectric generation as the major sources, even though these sources generate less than 4 percent of Kentucky's electricity ([www.eia.doe.gov](http://www.eia.doe.gov)). While this is an improvement, these percentages are still of concern in a state where electricity costs are relatively low due to our proximity to coal and where coal, the jobs it creates, and the way it is mined are major sources of public debate.

When asked to choose a best definition for biodiversity, 46 percent of those surveyed in 2009 correctly chose the answer, "the many different kinds of plants and animals." This was down from fifty-five percent in 2004. In addition, as in 2004, a large minority, 34 percent in 2009 and 31 percent in 2004, incorrectly identified the definition of biodiversity as "the many differing opinions on environmental issues". In a related question that asked the most common reason for the extinction of animals and plants, "habitat loss" was correctly identified by 60 percent of respondents. This was almost exactly the same percentages as those in the 1999 and 2004 surveys. Kentuckians were better able to identify the primary benefit of wetlands in the 2009 survey than in the 2004

survey. Only 63 percent said that wetlands help to clean natural water systems in 2004. This year, 68 percent answered this question correctly.



Only a little more than half of those surveyed in 2004 correctly answered a very basic question defining renewable resources. In the 2004 survey, only 55 percent correctly answered that solar energy and trees are renewable resources. In the 2009 survey, 67 percent correctly identified solar energy and trees as renewable. This is a notable improvement. However this means that a full 30 percent of Kentuckians still believe that coal, oil, iron and other metals are renewable resources.

On a question concerning hazardous waste, respondents did fairly well. When asked to identify which of the following: paints, acids and pesticides; glass and newspapers; or building materials such as lumber and nails were considered hazardous waste, 91 percent of those surveyed correctly identified paints, acids and pesticides. This is up from 86% in 2004. Kentuckians' knowledge of where garbage eventually ends up (the correct answer is landfills) continues to remain fairly high at 78 percent, compared to 77 percent in both 1999 and 2004. In 2009, 14 percent incorrectly identified illegal dumps as the leading destination for household garbage. This is the same percentage as in 2004 but an improvement over the 1999 findings of 23 percent.

Two new knowledge questions were added to the 2009 survey. The first asked, "Does all rainwater that runs off lawns, roads and fields go into a treatment plant?" Eighty six percent of those surveyed correctly answered "no" to this question. This is an interesting response in a state where pollutants in runoff and stormwater are major problems. It means that people understand that whatever is put onto fields, lawns and roads goes untreated into our waterways but perhaps have not made the next logical step that links that runoff pollution to their own everyday actions.

In the second new question, those surveyed were asked to compare the relative contributions of motor vehicles, factories and "the breath from people and animals" in adding carbon dioxide to the atmosphere. (Carbon dioxide is among the greenhouse

gases implicated in global climate change.) Fifty seven percent correctly identified emissions from motor vehicles as the highest contributor from among these three. Eight percent identified “the breath from people and animals” as the largest contributor.

## **ATTITUDES**

Other questions on the survey asked Kentuckians to give their opinions on various environmental topics. In 1999, Kentuckians surveyed tended to believe that air and water quality in the areas where they lived was better than air and water quality in general. These beliefs held true in the 2004 and again in 2009, though the percentages changed somewhat. For example, when asked to rate the environmental quality of water in the U.S., 45 percent in the 2009 survey reported that water quality was excellent or good. This compares with 40 percent in the 1999 survey and 50 percent in the 2004 survey. However, when asked to rate the environmental quality of water in their own area, 60 percent rated water quality as excellent or good, down from 62 percent in 1999 but up from 56 percent in 2004.

When asked to rate air quality in the U.S., 34 percent rated it excellent or good compared to 41 percent in 2004 and 44 percent in 1999. However, as with water quality, Kentuckians rated air quality in their own area as much better. In the 2009 survey, those Kentuckians surveyed who rated air quality in their own area as either excellent or good was 58 percent compared to 64 percent in 2004 and only 52 percent in 1999.

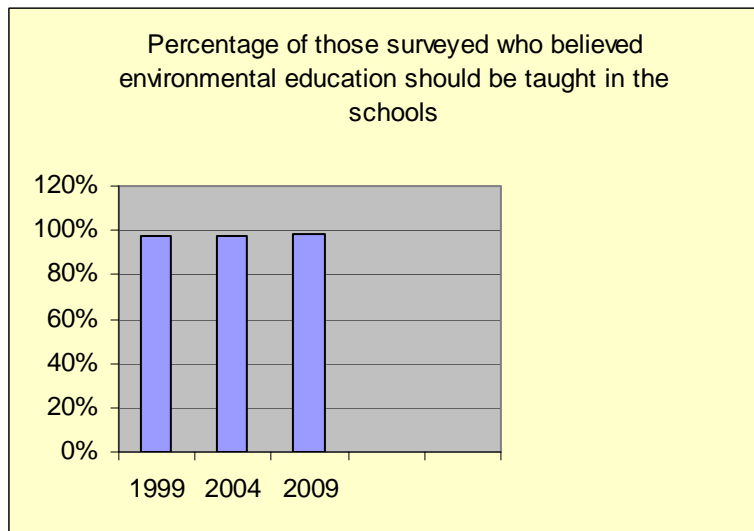
When asked if specific areas of the environment are adequately protected, there was a slight decrease between 2004 and 2009 in the percentage of Kentuckians who agree that there is adequate protection. For example, when asked if wild and natural areas are adequately protected, 67 percent agreed that they are adequately protected, compared to 72 percent in the 2004 survey and 69 percent in the 1999 survey.

Sixty-two percent of those surveyed in 2009, either agreed or somewhat agreed that wetlands are adequately protected. This is exactly the same percentage as in 2004 and slightly more than the 57 percent in 1999. Finally, 64 percent of those surveyed in 2009 agreed that endangered species are adequately protected compared to 70 percent in 2004 and 63 percent of those in the 1999 survey.

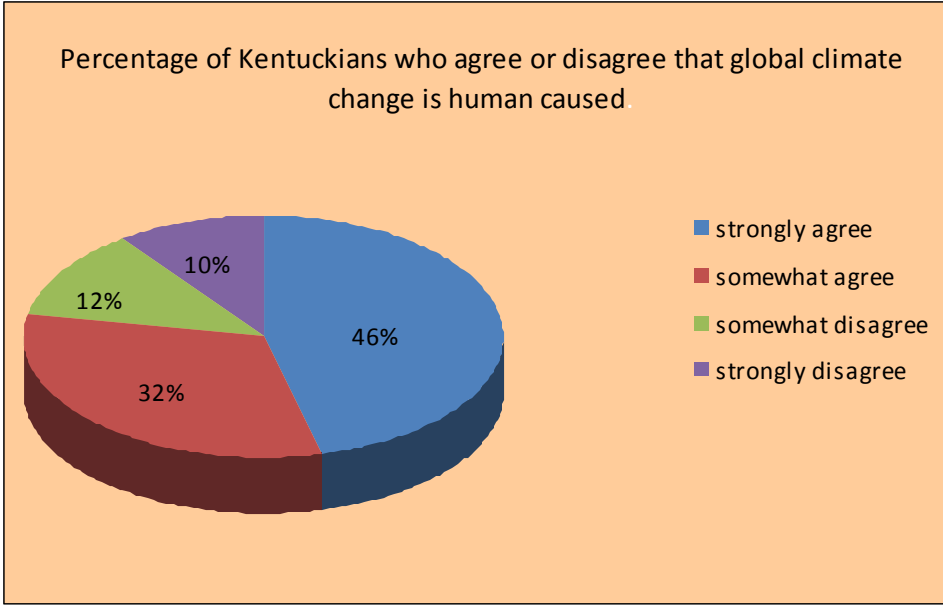
In perhaps the most controversial question of the survey, respondents were asked to agree or disagree with the following statement: “Private landowners should be able to use their land in any way they see fit.” As in the previous two surveys, the percentage of those who agreed and those who disagreed with this statement are very close, though there was a slight increase in the percentage that agreed with this statement. In the 2009 survey 54 percent of Kentuckians surveyed agreed with this statement, while 46 percent disagreed. In 2004, 51 percent of Kentuckians agreed with this statement while 49 percent disagreed. In 1999, 52 percent agreed and 48 percent disagreed.

In a question first asked on the 2004 survey, Kentuckians were asked to agree or disagree with this statement: “It is possible to both protect the environment and have a strong economy.” In 2004, 92 percent of respondents either strongly agreed or somewhat agreed with this statement. Remarkably, in the 2009 statement, even more respondents agreed. In this latest survey, 96 percent of respondents either strongly agreed or somewhat agreed with this statement. For years, the “conventional” wisdom has been the opposite so Kentuckians are obviously ahead of the curve on this issue.

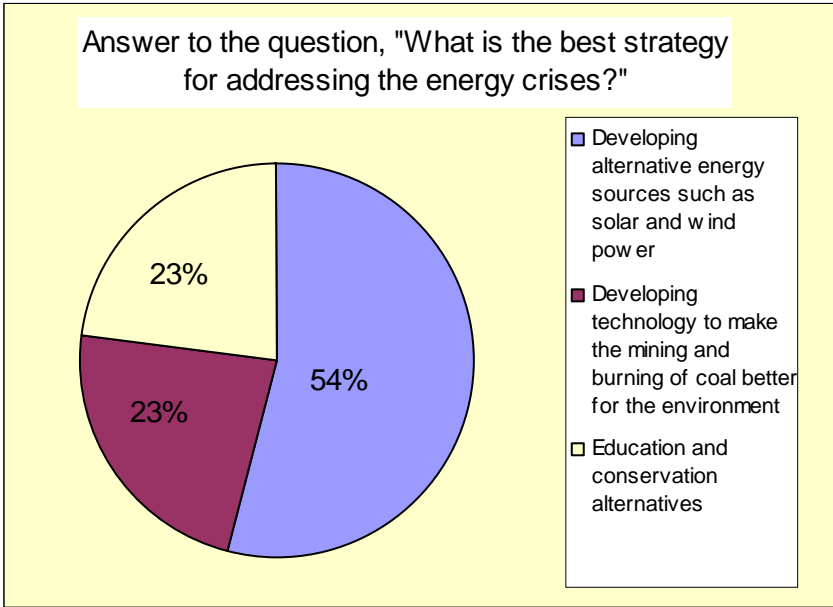
Those surveyed were asked to agree or disagree with the statement: environmental education should be taught in the schools.” In the 2009 survey, 98 percent agreed with this statement, which is just one percentage point off from those who agreed with this statement in both the other surveys. This number is almost exactly the same, as well, for national surveys on this topic ([www.neef.org](http://www.neef.org)). In many states such as PA, WI, and CA, the high percentages of citizens agreeing that environmental education should be taught in the schools, coupled with increasingly high costs for cleaning up environmental problems that could have been prevented in the first place, have lead to officially sanctioned public school curricula dedicated to environmental education.



Three new questions appeared on the survey of environmental attitudes this year. The first was about global climate change. Respondents were asked if they agreed or disagreed with the statement, “Human activity is causing global climate change.” Seventy-six percent of those surveyed either strongly agreed or somewhat agreed with this statement.



In a related question, respondents were asked which of three strategies was the best for addressing the energy crises. Fifty-four percent identified “developing alternative energy such as solar or wind power”, as the most important strategy; twenty-three percent answered “developing technology that would make mining and burning of coal better for the environment;” and another 23 percent answered that the choice “education and conservation incentives,” was the best way to address the energy crises. In the third new question, Kentuckians were asked if they agreed that the day-to-day actions of all of us are a major contributor to pollution, 92 percent agreed with this statement.



## **BEHAVIORS**

The final section of the survey concerned self-reported behaviors that protect the environment. Respondents were asked to report behaviors or beliefs that would have a positive effect on the environment. Although readers should be aware that positive behaviors are often over reported, Kentuckians surveyed (in both 2004 and 1999) do report a strong interest in knowing about and protecting the environment. For example, in all three surveys, 95 percent agree that knowing about environmental problems is important to them. This is the same percentage as in 1999. In the 2009 survey, 66 percent of those surveyed reported donating time or money to environmental causes, either frequently or sometimes, up slightly from 60 percent in 2004 and about the same as in 1999.

In 1999, 84 percent of Kentuckians said gas mileage is either frequently or sometimes an important consideration when they buy a car. This figure was 85 percent in 2004. In the 2009 survey, after gas prices spiked in 2008, 95 percent of Kentuckians report looking for cars that get better gas mileage.

Waste reduction is one of the most widely recognized ways to protect the environment and, on questions related to this issue, a fairly large number reported engaging in these behaviors. Ninety-two percent of those surveyed in 2009 reported that they attempt frequently or sometimes to reduce the amount of waste produced in their household. This compares to 93 percent in both 2004 and 1999. Similarly, in 2009, 80 percent of those surveyed reported buying products with less packaging, compared to 83 percent in 2004 and 84 percent in 1999.

Money talks and one of the questions on the survey asked respondents to answer yes or no regarding whether or not they would be willing to pay more for goods and services in order to protect the environment. The number of those who answered yes dropped from the 1999 survey, moving from 74 percent in 1999 to 63 percent in 2004 to 61 percent in the 2009 survey.

In a new question asked this year, those surveyed were asked how often they bought locally grown foods and other products. Ninety-six percent of those surveyed answered that they did so frequently or sometimes.

### **Differences in General Environmental Knowledge Based on Socio-Economic Factors**

Along with the knowledge, attitude and behavior questions, those surveyed were asked to report such information as their age, education level, gender, in what type of community they lived, and how long they had lived in the Commonwealth. For some questions on the survey there were statistically significant differences in the way these socioeconomic factors affected answers to the questions. In contrast to the two previous surveys, the 2009 data reported a general knowledge score among those surveyed.

In several socioeconomic categories, there were significant differences with respect to the level of general environmental knowledge. For example, the general environmental



knowledge level of women was lower than that of men and (as would be expected) the higher the level of educational attainment, the higher the general knowledge level. Additionally, the higher the household income level, the better respondents did on the knowledge section of the survey. Since income often correlates with education level, this too is not surprising.

Such indicators as community type, age, and how long a person had lived in Kentucky did not seem to affect their ability to correctly answer the knowledge questions, one way or another.

### **Gender differences in attitudes and behaviors**

Within socioeconomic groups, those with higher incomes and levels of education generally reported more environmentally favorable attitudes and behaviors.

Gender differences were also apparent in attitudes and reported behaviors. For example, women rated air and water quality in their own areas lower than did men in the survey. Women were also less likely to believe that wild areas are adequately protected. Women in the survey were more likely than men to believe that global climate change was human caused and that the day to day actions of all of us are a major source of pollution.

In reported behaviors, women were more likely than men to report that gas mileage was a major consideration when buying a car and also more likely to buy products with less packaging and to reduce household waste.