1992 Kentucky Department of Fish and Wildlife Resources Conservation Education Program Review

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Abstract: The Kentucky Department of Fish and Wildlife Resources conducted a survey of students from 38 high schools (1,459 useable respondents) to ascertain the effects of the Conservation Education Program. Of the surveyed individuals, 15.7% had attended Department classes and camps, 55.3

% had attended Department classes only, and 29% had not attended any Department programs. The students were asked questions on the environment, attitudes toward outdoor recreation including hunting and fishing, and their own potential for supporting outdoor recreation. Results showed that students who had attended Department programs were significantly more interested in: environmental issues, participating in outdoor recreation, and encouraging their own children to participate in outdoor recreation.

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The Kentucky Department of Fish and Wildlife Resources has held Conservation Education Programs since 1945. These lessons have evolved over the years from outdoor safety programs for all grades to fish and wildlife related environmental programs for 5th and 6th grade students only. From approximately 90,000 students who currently attend these classes each year, 6,000 to 6,500 are accepted at camp for 1 week during the summer.

As the Department plans to continue development, it was recognized that an evaluation was needed for current programs to have a mechanism of comparison for future evaluations. It was decided to evaluate high school students who would have completed Department programs at least 3 years prior to the survey.

Methods

A survey was constructed by Department educators which could be administered with cooperation from high schools across Kentucky. Each of 19 Program Leaders selected 2 schools randomly from their area of responsibility.

After determining specifics about the respondent to identify association with Department programs, the first survey question established the student's attitude toward the environment. The next 2 questions were specifically written to evaluate the student's beliefs about habitat and personal involvement in habitat improvement. After ascertaining specific hunting and fishing activities in which each student planned to participate, a question on possession of the required hunter education card was asked. Students were then asked to estimate the number of times they participated in outdoor recreation other than hunting and fishing. Finally, they were asked if they would personally encourage their children to participate in hunting and fishing when they become parents.

Two thousand surveys were distributed and 1,639 were returned. After screening to eliminate various inappropriate respondents and totally blank surveys, 1,459 were included in statistical analysis. Usable surveys included those filled out by 650 males (44.6%) and 809 females (55.4%). Respondents were well balanced according to residency with 448 students (31.2%) living in cities > 10,000, 430 students (29.9%) living in towns < 10,000 and 558 students (38.9%) residing in rural areas.

The students were divided into 3 groups. Group 1, 229 respondents (15.7%), were students who attended both Conservation Education classes and camp. Group 2, 807 students (55.3%), had attended Conservation Education class but had not attended camp. Group 3, 423 students (29.0%), had not attended either Conservation Education classes or camp.

Each question was evaluated from a perspective of: participation in Department programs versus non-participation, male versus female respondents, and residency (city, town, or rural). On the questions concerning planned participation in hunting and fishing and encouragement of future family members toward fishing and hunting, a comparative analysis of females within each group was accomplished.

Statistics were computed using an SPSS program format. Data were analyzed through application of a Chi-Square and the matrices varied with question design. A Pearson's value was produced with significance determined at the .05 level.

Results

To provide continuity of thought for analysis, the order of the original questions was altered. All questions focusing on attitudes were analyzed first followed by active participation.

1. Question 1. Are you interested in environmental issues and their effect on your future? Yes or No.

The group results were significant using Pearson's R at the .001 level (N = 1,457). Answering yes: group 1, 96.5%; group 2, 92.7%; group 3, 88.7%.

This question indicated that those students who attended conservation camp and conservation classes tended to view environmental issues and the effect on their future more significantly than other students.

When environmental issues were examined by gender and residency, there was no significant difference in responses.

2. Question 2. Is the protection of fish and wildlife habitat an important environmental issue to you? Yes or No.

The group results were significant using Pearson's R at the .001 level (N = 1,457). Answering yes: group 1, 92.6%; group 2, 91.4%; group 3, 85.3%.

This question indicated that those students exposed to classes were more likely to view habitat protection as an environmental issue.

When examined by gender, the results were significant using Pearson's R at the .0158 level. Males were more likely (92%) than females (88.1%) to recognize habitat as an important environmental issue.

When this question was examined by residency, the results were insignificant.

Question 3. Have you participated in community efforts to improve wildlife habitat in the past year? Yes or No.

This question measured active participation rather than values. The group results were not significant (N = 1,454). Answering Yes: group 1, 29.8%; group 2, 25.6%; group 3, 23.5%.

When examined by gender, the results were significant using Pearson's R at the .00001 level. Males were more likely (32.5%) than females (20.1%) to actively work toward habitat improvement.

When this question was examined by residency the results were not significant.

4. Question 7. If you raise a family in Kentucky, will you personally encourage them to participate in fishing and hunting? This question provided four choices: fishing, hunting, both or neither.

The group results were significant using Pearson's R at the .04855 level: (N = 1,457) (Table 1). This indicated that students who participated in conservation camp and classes are more likely to encourage future generations to participate in consumptive uses of wildlife.

Fishing was examined separately by groups. When encouragement of "fishing only" and "both hunting and fishing" were combined, the results indicated: 76.7% of group 1, 74.2% of group 2, and 66.5% of group 3 would encourage future family members to fish.

Table 1. Encouragement of Future Family by Group, Gender, and Residency.

	Encouraged hunting and fishing	Fishing only	Hunting only	Neither hunting nor fishing
Group				
Group 1	52.0%	24.7%	0.4%	22.9%
Group 2	48.4%	25.8%	1.3%	24.6%
Group 3	41.4%	25.1%	1.4%	32.0%
Gender				
Males	66.5%	19.4%	1.9%	12.3%
Females	31.1%	30.2%	0.6%	38%
Residency				
City	33.4%	33%	0.7%	33%
Town	43.7%	24.4%	2.3%	29.6%
Rural	60.3%	20.2%	0.7%	18.8%

Hunting was examined separately by groups. When encouragement of "hunting only" and "both hunting and fishing" were combined, the results indicated: 52.4% of group 1, 49.7% of group 2, and 42.8% of group 3 would encourage future family members to hunt.

Females within each group were compared. The results were significant using Pearson's R at the .01 level. In encouragement of both hunting and fishing, group 2 females (34.9%) said they would encourage these activities in comparison to group 1 females (28.6%) and group 3 females (24.4%). The group of females who answered most often that they would encourage neither hunting nor fishing was group 2 (33.6%), followed by group 1 (36.2%) and group 3 (48.0%). This was the only item (analysis of groups by gender) throughout the survey which did not follow the pattern of group 1 indicating a more positive regard for fish and wildlife related issues.

When this question was examined by gender only, the results were significant using Pearson's R at the .00001 level (Table 1). When compared, males plan to encourage "both hunting and fishing" twice as frequently as females. When encouragement of "neither hunting nor fishing" was examined, females were three times more likely to not encourage these activities (females, 38%; males 12.3%).

Fishing only was examined separately by gender. When encouragement of "fishing only" and "both hunting and fishing" were combined, the results indicated: 85.9% of the males and 61.3% of the females would encourage future family members to fish.

Hunting only was examined separately by gender. When encouragement of "hunting only" and "both hunting and fishing" were combined, the results indicated: 68.4% of the males and 31.7% of the females would encourage future family members to hunt.

When this question was examined by residency, the results were significant

using Pearson's R at the .00001 level (Table 1). Rural students (81.2%) were considerably more likely to encourage hunting and/or fishing than students from towns (70.4%) or cities (67%).

Fishing and hunting were examined by residency using the same methods previously noted. Results for both activities individually indicated more support for fishing and hunting in rural areas than in cities or towns.

5. Question 6. Do you participate in outdoor recreation where there is an opportunity for viewing wildlife such as camping, hiking or bird-watching? Answer options were: never, at least once but less than five times a year, more than five but less than ten times a year, more than ten times a year.

This question addressed non-consumptive uses of wildlife. The group results were significant using Pearson's R at the .00001 level (N = 1,451). Those indicating the least participation (never) were: group 1, 9.3%; group 2, 15.8%; group 3, 25%. Those who indicated the most participation (more than 10 times a year) were: group 1, 37.4%; group 2, 26.1%; group 3, 19.8%.

When this question was examined by gender, males participated significantly more than females (Pearson R of .00001). Those who participated least (never) were: males, 14.6% and females, 19.7%. Those who participated most (more than 10 times a year) were males, 35.8% and females, 18.2%.

When examined by residency, rural students participated in non-consumptive activities significantly (Pearson's R at the .04 level) and proportionately more than those from cities or towns. Those who participated the least (never) were from: cities, 17.4%; towns, 18.1%, rural, 16.2%. Those who participated the most (more than 10 times a year) were from: cities, 20.8%; towns, 27.8%; rural, 29.7%.

6. Question 4. What hunting and fishing activities do you plan to participate in this year? Several options were offered.

This question examined specific hunting and fishing activities. Data from this question were somewhat confounded due to responses being singular (hunting) and/or differentiated by multiple hunting related responses (hunting, waterfowl hunting, deer hunting, turkey hunting). Results indicated 65% of all students planned to do some type of fishing and 34.7% indicated they planned to do some type of hunting (Table 2). Conversely, 31.3% planned to neither hunt nor fish (N = 1,459).

The results of activities by groups indicated that students from group 1 planned to participate proportionately more than group 2 or group 3. Group 2 students planned to participate more proportionately than group 3 (Table 2).

Females from each group were compared for preference of activities in which they planned to participate. Group 1 females consistently indicated they planned to participate at higher rates than group 2 or group 3 females. When the question addressing "no participate" was examined, group 1 females indicated lower rates (39.3%) than group 2 (42.3%) or group 3 (55.5%) (Table 3).

When examined by gender only, the results indicated that males planned to

Table 2. Activities by group

Activity	Group 1 (N = 229)	Group 2 (N = 807)	Group 3 (N = 423)	Total (N = 1459)
Deer Hunt. (N = 409)	38.4%	26.5%	25.3%	31.5%
Waterfowl Hunt. (N = 79)	7.9%	0.4%	0.6%	5.4%
Turkey Hunt. (N = 131)	12.2%	8.0%	9.0%	0.9%
Trout Fish. (N = 208)	20.5%	12.8%	13.7%	14.3%
Hunting (N = 507)	46.3%	32.7%	32.4%	34.7%
Fishing (N = 948)	72.9%	66.8%	57.2%	65.0%
None (N = 457)	22.7%	30.0%	38.5%	31.3%

Table 3. Activities by females within groups.

Activity	Group 1 (N = 107)	Group 2 (N = 473)	Group 3 (N = 229)
Deer Hunt. (N = 70)	10.3%	8.9%	1.6%
Waterfowl Hunt. (N = 10)	1.9%	1.1%	1.3%
Turkey Hunt. (N = 23)	2.8%	2.7%	3.1%
Trout Fish. (N = 55)	9.3%	6.3%	6.5%
Hunting (N = 92)	15.9%	10.6%	9.6%
Fishing (N = 419)	59.9%	55.4%	41.0%
None (N = 369)	39.3%	42.3%	55.5%

fish and hunt significantly more than females (as expected). However, female interest in fishing was significantly higher than in hunting, with over half the total females planning to fish (Table 4).

When examined by residency, results indicated that rural students planned to hunt and fish considerably more than students from cities or towns (Table 5). These figures support the assumption that areas with higher population density correlate to lower numbers participating in these traditional activities.

Hunting was examined separately. To reduce the aforementioned confounding factor, any type of hunting was counted as hunting so the following question on hunter education cards could be interpreted. When all types of hunting were combined, 525 (36%) of the students indicated they planned to participate in some type of hunting. Group 1 (46.3%) had a significantly higher rate of hunters (Pearson's R at .0018 level) than group 2 (34.3%) or group 3 (33.6%).

7. Question 5. Do you have a valid hunter education card issued by the Kentucky Department of Fish and Wildlife Resources? Yes or No.

A valid Kentucky hunter education card was possessed by 23.6% of all students. The percentage of students possessing cards by groups indicated: group 1, 48.7%; group 2, 22.1%; group 3, 12.9%. The high disparity for group 1 is expected as hunter education is an activity taught at camp. However, group 2 had proportionately more cards than group 3.

When examined by gender, the results indicated that 39.2% of the males

Table 4. Activities by gender.[1]

Activity	Males (N = 650)	Females (N = 809)	Total (N = 1459)
Deer Hunt. (N = 409)	52.1%	8.6%	28%
Waterfowl Hunt. (N = 79)	10.6%	1.2%	5.4%
Turkey Hunt. (N = 131)	16.6%	2.8%	9%
Trout Fish. (N = 208)	23.5%	6.8%	14.3%
Hunting (N = 507)	63.8%	11.4%	34.7%
Fishing (N = 948)	81.4%	51.8%	65%
None (N = 457)	13.5%	45.6%	31.3%

[1]Percentages listed in the male/female columns are in relation to their respective sex.

Table 5. Activities by residency.

Activity	City (N = 448)	Town (N = 430)	Rural (N = 558)
Deer Hunt. (N = 409)	18.1%	27.9%	36.4%
Waterfowl Hunt. (N = 79)	2.4%	7.2%	6.4%
Turkey Hunt. (N = 131)	5.4%	10.5%	10.6%
Trout Fish. (N = 208)	11.8%	16.7%	14.5%
Hunting (N = 507)	24.3%	34.2%	43.4%
Fishing (N = 948)	56.9%	65.3%	71%
None (N = 457)	39%	31.2%	25.3%

had cards while 11.1% of the females had completed hunter education. The ratio was expected; however, the percentage of young women who have hunter education cards exceeds the percentage of the general population with hunting licenses.

When examined by residency, the results were again predictable with 30% of the rural residents having cards compared to 21% for towns and 18% for cities.

With hunter education mandatory for those persons born after 1 January 1975, a comparison of those who stated they intended to hunt and those who had valid hunter education cards was accomplished. The results indicated that students who attend Department programs are significantly more legal or ethical in practicing hunting (Pearson's R value of .000001). Those hunting legally were: group 1, 69.5%; group 2, 50.4%; group 3, 30.7%. while group 1 was expected to have the highest percentage, group 2 indicated a stronger ethical obligation to obey the law requiring hunter education.

Conclusions

This survey will be a very useful tool in planning and executing the educational programs for the Department. It indicates that students who attend Conservation Education programs have higher concern for the world they live in and

they are more active in both consumptive and non-consumptive opportunities. Perhaps most importantly, they appear to be ready to pass their values to the next generation.

Department programs need to continue to stress fish and wildlife values in all schools with special emphasis toward urban populations and female participation.

This survey indicates that high school students have strong interest in fishing in particular. Even the support stated for hunting is much higher than anticipated. Beyond the formal education process, programs should be instituted to nurture and maintain this high degree of interest.