Gifted Students' Attitudes Toward Endangerment: Some Observations

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Abstract: One hundred and seventeen solutions to endangered species problems were presented by gifted students participating in the Georgia Future Problem Solving Bowl, a competition which encourages students to develop solutions to problems they will encounter in the future. The Nongame/ Endangered Wildlife Staff subjectively evaluated the students' attiutdes on endangerment based on their responses to Bowl questions. Solution responses overemphasized the impact of hunting on endangerment while demonstrating little knowledge of the impact of habitat degradation. Attitudes expressed by students strongly suggest serious deficiencies in wildlife education in Georgia schools. A well-developed endangered wildlife educational program in schools would help students assume their future role as land stewards. If wildlife is to remain an important part of the environment, wildlife professionals must ensure that Georgians understand the conservation of our natural resources.

A recent opportunity to participate as judges in the Georgia Future Problem Solving Bowl provided insight into student perspectives of endangered species issues. The Future Problem Solving Bowl is a national and international program involving about 75,000 gifted students annually. It's objectives are: to encourage students to look for solutions to problems they will encounter in the future, to encourage development of cooperation and teamwork skills, and to enhance creative thinking (Paul Torrance, pers. commun.). The topic selected for the 1982 Bowl was endangered species management.

Two hundred and nine students from across Georgia participated in team and individual competition in 2 divisions: juniors (grades 4–5), intermediates (grades 7–9), and seniors (grades 10–12). Students were encour-

aged to familiarize themselves with endangered species issues in preparation for the Bowl. Practice problems were distributed prior to competition but the specific ones to be used were not announced until participants arrived. Specific problems varied with age category and dealt with how best to alleviate "people's ignorance, misconceptions, and fears that have resulted in the approaching extinction of many species of wildlife" (Paul Torrance, pers. commun.). Juniors proposed solutions that could be implemented on a community level; intermediates on a national level; and seniors on a global level. No notes or study aids were allowed during actual competition.

Each participating school team was accompanied by a teacher/coach whose function was to locate and provide information on endangered species prior to competition. The Nongame/Endangered Wildlife office of Georgia's Game and Fish Division provided printed information and lectures for participating teams upon request.

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Methods

Following the competition, Nongame/Endangered Wildlife Program staff categorized solutions according to the nature of student's responses. Evaluations were subjective since interpretations of attitudes were made from essay answers.

These evaluations, while not statistically evaluated, do offer insight into the level of wildlife awareness in Georgia's school systems. Subjective evaluations can be useful to wildlife agencies in assessing and planning for future needs.

All solutions were placed in 1 of 2 categories: realistic or unrealistic. Realistic pertained to solutions that could reasonably be implemented by a public or private organization, i.e. an endangered species library or establishing a wildlife curricula in the schools. Unrealistic solutions were those considered a fantasy, such as the creation of a voluntary wildlife biologist association to create habitat on the moon, in satellites or underground; or fitting all animals with bullet proof vests.

Each response was further categorized according to attitudes toward endangerment directly or indirectly revealed in the essay. Responses were classified as relating to 1 or more of the following 6 categories regardless of feasibility:

a) Habitat preservation or acquisition—loss or preservation of habitat.
b) Elimination of pollution—pesticide or commercial pollution.

c) Management of populations—manipulation of animal populations.

d) Public education—methods and/or demands for dissemination of endangered species information.

e) Restriction or elimination of hunting or hunters—killing or harming animals (anti-hunting sentiment).

f) Other—unable to classify.

Results and Discussion

Quality of bowl solutions varied widely. Scoring criteria included originality which may have contributed to the large percentage (44%) of unrealistic solutions. These observations are not made in an attempt to be critical but to further emphasize the apparent lack of meaningful wildlife information being presented in Georgia schools. Table 1 summarizes attitudes expressed by the students.

Of the 117 essays presented, 70% felt that public education would have a positive impact on endangered wildlife. The problems presented to the students asked for ways to educate people regarding endangered wildlife. Undoubtedly this influenced the high percentage of answers mentioning education.

Nineteen percent indicated that some form of management was needed to save endangered wildlife. Recommendations ranged from "captive breeding programs" to "mental telepathy for animals." Attitudes expressed toward management demonstrated a distorted concept of wildlife conservation as shown by their lack of understanding of the importance of habitat.

Students frequently expressed the viewpoint that hunting was a more important reason for endangerment than pollution or habitat loss. Fourteen percent felt that hunting was a major reason for decline in wildlife populations. Habitat destruction and pollution, factors which are leading causes of

Table 1. Gifted Students' Attitudes Toward Endangerment

Proposed Solutions To Endangerment	Percent of Responses[a]			
	Combined	Junior	Intermediate	Senior
Restrict or eliminate hunting or hunters	14	19	9	11
Management of populations	19	28	9	17
Elimination of pollution	4	6	0	11
Habitat preservation or acquisition	9	4	13	11
Public Education	70	59	78	83
Other	6	9	4	0

[a] Responses do not total 100% since students commented on 1 or more factors.

endangerment, were mentioned in 9% and 4% of the papers, respectively. Observations made during classroom presentations indicate that most students think in terms of individual animals and not populations. They visualize direct harm to each animal (i.e. trapping) as being more detrimental than indirect factors (i.e. pollution) which may ultimately harm entire populations. It became apparent by viewpoints expressed in the essays that most students are not aware of the tremendous negative impact of habitat loss on wildlife populations while the impact of sport hunting has been misrepresented. These misconceptions must be corrected now if wildlife populations and sport hunting are to survive.

Higher quality solutions and increased wildlife awareness were exhibited by those schools where Nongame/Endangered Wildlife Program staff had presented programs. Seventy-five percent of the solutions coming from those teams (n = 21) were categorized as realistic with students discussing such topics as pollution, eagle hacking, and manatee/power boat mortality. Increased knowledge of wildlife problems exhibited by these students indicates that a long-term wildlife educational program would be very beneficial.

All 3 divisions placed education as the top priority. The highest percentage of unrealistic answers (67%) were in the senior division. The intermediate division appeared to be the most environmentally aware. Thirteen percent of the intermediates felt that habitat problems presented the greatest threat to wildlife populations, but still placed hunting above pollution.

Interest and need for endangered species information have been clearly demonstrated in Georgia not only by the Future Problem Solving Bowl but also by numerous requests received for films, lectures, and printed material. From 1 July 1981 to 30 April 1982 more than 145 endangered wildlife programs were presented by Game and Fish personnel to schools, conservation groups, and social organizations. During the same period, 6 different Department of Natural Resources endangered wildlife films were shown more than 1,300 times. These films have also been used by every major television station in the state. There is a tremendous desire to learn about endangered wildlife in Georgia. Interest in endangered wildlife reflects interest in all wildlife and should be encouraged and fostered. All wildlife (game and nongame) would benefit from a sound wildlife educational program. The lack of knowledge reflected by student responses indicates that Georgia is doing an inadequate job of wildlife education. If our wildlife management programs are to experience long-term success then funding and staffing limitations for education must be removed.

A strong educational program must emphasize wildlife in urban areas where students are removed from actual wildlife contact. Traditional college wildlife boilogy curricula includes little, if any, training in wildlife education. Given this background it is not surprising that many wildlife and fisheries

biologists are field-oriented (Gilbert 1971, Witter et al. 1981) and less than enthusiastic when called upon to present classroom programs. However, time and money invested in educational activities today will pay off in long-term dividends by creating a Georgia citizenry that is aware of and appreciative of wildlife and wildlife management techniques.

The realization that there is a critical need for environmental education is not a new idea. The Committee on North American Wildlife Policy (1973) expressed similar concerns:

We strongly endorse environmental education of many kinds in the schools. Teacher training in ecological subjects has lagged far behind minimum requirements if we are to achieve basic goals in human welfare. There is around us abundant testimony that the environmental crisis of today and tomorrow must be met in the minds of our children. There is no greater challenge of our time.

Students within the state frequently request information on endangered species not occurring in Georgia. Requests for information on the clubbing of harp seals is almost routine. This interest is generated by emotional anti-harvest organizations that appear to be far more effective than state wildlife agencies in their publicity efforts. It is our opinion that students should be first familiarized with endangered species indigenous to Georgia as these are the ones they will most likely encounter or have a future impact upon. Most students and teachers are receptive to the study of these species once they realize that the animals occur in their state.

Solutions presented by different teams from the same school expressed similar viewpoints, suggesting strong teacher influence. Teachers have a tremendous influence in shaping children's opinions. It is imperative that teachers be knowledgeable of the principles of wildlife management and conservation. Taylor and Samuel (1975) in a survey of West Virginia teachers found them lacking in knowledge concerning wildlife and wildlife management. Until a well developed wildlife educational program is established, wildlife management will continue to be slowed by the public's lack of understanding (Burts 1977).

Teacher training programs regarding wildlife management should be designed and implemented statewide. This would allow us to reach a far greater segment of the population than would ever be possible by one-on-one contacts between Game and Fish personnel and the public. A pilot program of this nature is currently in the developmental stage in Georgia. This year's program is a start but it involves only 7 of Georgia's 159 counties. Teachers, administrators, and students are receptive to wildlife education. State wildlife agencies should provide the leadership to implement this effort.

While data presented are not conclusive, it does indicate that there is a strong interest in endangered wildlife among Georgia school children, but a serious lack of knowledge. A well-developed endangered wildlife education

program is an excellent way to prepare students for their future role as land stewards. We must create a higher level of responsibility toward all wildlife if we are to preserve a productive and rewarding environment (Advisory Committee on Nongame Wildlife Policy 1974).

Today's students are tomorrow's decision makers and leaders. The knowledge and expertise are available to upgrade the level of wildlife awareness in Georgia's youth. What is lacking is a realization of the magnitude of the problem and funding to establish training programs. If wildlife is to remain an important part of the environment then wildlife professionals must insure that our youth acquire a basic understanding of our natural resources.

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