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ABSTRACT

A survey of 20 school campuses throughout Arkansas showed that most lack natural areas for outdoor environmental education. For most Arkansas schools no checklists of local plants are available, and there are no reference collections at the schools. Projects are underway at State College of Arkansas to establish herberia for the woody plants of Arkansas and the vascular plants of Faulkner County.

Those who teach botany realize that it has become increasingly difficult to find adequate collection sites for plant materials. As our urban areas enlarge and Arkansas becomes more industrialized, it is also much more difficult to locate areas for studying relationships within natural communities of plants and animals. When such areas are found, permission for doing the study must be obtained from the owners of the property, and this may be difficult. At the same time, it is necessary that these aspects of biology be taught to larger numbers of people, for decisions about environment are constantly being made by all citizens and problems about the environment will increase in the future. For these reasons the schools and colleges must provide space for learning ecologic principles. For most classes, the school campus must become part of the classroom (Brainerd, 1971).

To assess the campus environment for outdoor studies in biology, a survey of 20 school campuses (Table I) was made by 20 botany students during spring vacation in March 1973.

Table I. Types of Schools Used in Survey: Description of School Community

School Number	Population of Town	Location of Town in Arkansas	Grades Taught in School	School Population	Type of School
1	150,000	Central	1-5	500	Public
2	4,000	South	4-6	—	Public
3	650	South	1-6	350	Public
4	7,000	Central	1-12	300	Church
5	1,500	North	1-6	400	Public
6	10,000	Central	1-6	—	Public
7	7,000	Central	1-6	500	Public
8	1,000	North	4-6	200	Public
9	60,000	South	1-4	350	Public
10	260,000	Central	1-8	700	Church
11	4,000	South	1-4	500	Public
12	3,000	Central	9-12	700	Public
13	11,000	South	9-12	1,500	Public
14	2,500	North	1-12	1,500	Public
15	500	North	1-6	150	Public
16	9,000	North	1-6	450	Public
17	60,000	South	1-6	350	Public

School Number	Population of Town	Location of Town in Arkansas	Grades Taught in School	School Population	Type of School
18	60,000	Central	1-6	400	Public
19	20,000	Central	1-6	1,000	Public
20	60,000	South	5 and 6	400	Public

Table II. Wildflowers Collected from School Campuses Throughout Arkansas, March 5-10, 1973

Name of Plant	School Campus Number																				Total No. of Schools Where Wildflower was Found
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Antennaria: everlasting									x												1
Cardamine: bitter cress	x									x	x										3
Claytonia: spring beauty	x			x	x					x	x		x		x						7
Galium: bedstraw										x											1
Houstonia: bluet	x	x			x			x	x	x	x										7
Lamium: henbit	x							x		x	x			x							5
Ranunculus: buttercup	x		x	x					x	x				x							6
Stellaria: chickweed	x								x	x											3
Taraxacum: dandelion			x	x	x	x	x	x	x	x			x								9
Trifolium: clover					x				x	x		x	x								5
Verbena: Verbena													x								1
Vicia: Vetch										x											1
Viola: johnny-jump-up	x										x			x							3
Total number of wild flowers found at school	7	1	2	3	4	1	1	3	6	10	5	1	4	3	1	0	0	0	0	0	

Emphasis was on the campus environment, with special reference to the availability of plants for study by pupils. The wildflowers which were identified using Fernald (1950) are listed in Table II.

Although in all cases the appearance of the school buildings was rated as good or excellent, only 13 campuses were reported good to excellent in appearance of the lawns, and seven were reported bleak and/or bare. The total campus environment usually needed attention. Only five school campuses had cultivated flowers, which included roses, iris, and daffodils. Thirteen campuses were adequately landscaped with shrubs. Numbers of trees on the campuses ranged from approximately 200 to only three. On all campuses there was adequate space for play, although not all schools had the space "developed" with equipment.

On only two campuses were there natural areas for outdoor education, and at these schools the various teachers utilized the areas for class studies. At eight schools some outdoor education could be done with the limited space, primarily by using the campus trees; however, on 10 campuses no space was available for environmental education. Table II indicates how inadequate the 20 school campuses would be in the study of wildflowers of Arkansas. A look at the number and kinds of wildflowers which bloom on these campuses shows that there is a great need for natural areas where wildflowers can be maintained. Learning to recognize the plants of such an area would be only part of the environmental learning which could occur (Dale, 1967).

The results of another study by a botany class also emphasize the need for proper management of campuses so that organisms will be available for students in the future. Wildflowers were collected from the school campuses in Conway, Arkansas (Table III). The number of kinds of

wildflowers is directly proportional to the length of time a school has been in operation on its site.

For most Arkansas schools, no checklists of local plants are available for use by the teacher and the pupils, and there are no reference collections at the schools.

No assessment of the college campuses was made. Currently, the botany class at State College of Arkansas is continuing the project of making a reference collection of the woody plants of Arkansas. Plants in this herbarium are available for use by beginning students in botany and general biology who could use such help. This collection, primarily of trees, at present contains only 96 species, less than a third of those native to the state (Moore, 1972). However, these are samples of the trees most frequently seen by students and, hopefully, are the trees which grow most abundantly in the state. Many species are represented by several specimens, collected from various parts of Arkansas, and these enable the students to study the variablity within the species.

Renewed effort is being expended to complete the State College of Arkansas herbarium collection of the vascular plants of Faulkner County so that a well-documented annotated checklist of these plants can be available when needed by researchers. Such a checklist is greatly needed at the present time for environmental inventory studies and environmental impact statements. The vascular plant collection includes 14 pteridophytes in 5 families, 3 gymnosperms in 1 family, and 790 angiosperms: 12 monocotyledonous families with 144 species and 94 dicotyledonous families with 646 species. This total of 812 species may sound complete, but several groups need rechecking and many obvious omissions need to be added. Botany students are involved in this work and are making valuable contributions to the herbaria.

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Table III. Wildflowers Collected from School Campuses in Conway, Arkansas (Faulkner County), April 6-10, 1970

Name of Plant	School Campus
Brassica: wild mustard	SJ, CHS
Capsella: shepherd's purse	CHS
Cardamine: bitter cress	SJ, I, S, E, JH, CHS
Cerastium: mouse-eared chickweed	E, JH, CHS
Claytonia: spring beauty	SJ, I, S, JH, CHS
Duchesnia: Indian strawberry	JH
Erigeron: fleabane	CHS
Helenium: sneezeweed	CHS
Houstonia: bluet	SJ, I, S, E, JH, CHS
Lamium: henbit	SJ, S, JH, CHS
Muscari: grape hyacinth	S
Nothoscordum: false garlic	S
Ranunculus: small-flowered buttercup	SJ,
Ranunculus: large-flowered buttercup	I, S, CHS
Senecio: ragwort	CHS
Stellaria: chickweed	S, CHS
Taraxacum: dandelion	SJ, I, S, E, JH, CHS
Vicia: vetch	CHS
Viola: johnny-jump-up	S, JH, CHS
Viola: blue violet	SJ, I, CHS

St. Joseph Elementary School (SJ), Ida Burns Elementary School (I), Sallie Cone Elementary School (S), Ellen Smith Elementary School (E), Conway Jr. High School (JH), Conway Senior High School (CHS).