

Natural Areas

As a Community Resource

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This paper was delivered to the NABT sessions with the AIBS at Purdue University, August, 1961. It was presented with beautiful Kodachromes made by Prof. Klotz. In this article, the author tells how natural areas can be preserved around and in large metropolitan centers.

Every teacher is aware of the value and importance of community resources. One of those which is often neglected is the natural undisturbed area in the neighborhood. And these are rapidly disappearing. It may be that this generation will have the last chance to set these areas aside. This is true on the national level. Increasing populations place tremendous pressures on the land. Areas which were saved by their inaccessibility, or because of their marginal nature, or because of their rugged topography are falling prey to the bulldozer. Even those areas that have been set aside suffer from population pressures. The big trees of California have been harmed by visitors. It has been a case of their being loved to death. There has been surprisingly little vandalism; people stand in awe of these giants. But the number of people walking around in these big tree groves has compacted the soil and apparently has damaged the root systems of some of the trees. People are the chief problem of many wilderness areas in the national forests. Large numbers flock to take advantage of these primitive regions.

But it is also true that on the state and local levels this may be the last chance to identify and set natural areas aside. Science teachers certainly will be in the forefront of such a movement. For these provide a significant resource that ought to be set aside. It is surprising how much really spectacular scenery one can find when he finally opens his eyes.

How can these areas be located? One of the best ways is to check the topographical sheets published by the U. S. Geological Survey. They are available from the U. S. Geological Survey, Washington 25, D. C. Usually they

are also available from the state department of conservation. These are good investments not only to locate an important community resource, the natural undisturbed areas, but also to become more familiar with the topographical details of the area where you live and in which your school is located. They are relatively inexpensive; the cost only 30c each.

Natural areas can easily be located by looking for the green areas and the areas indicated as marshy areas, sandy areas, small lakes, waterfalls, etc. They may then be visited on a Sunday afternoon to see whether they are still undisturbed. Information from local residents is also helpful in identifying these areas and in learning something of their history. Another very good source is to be found in the reports of the state academy of science. These are valuable not only in locating these areas but also in giving some of the history of the area and in listing some of the plant and animal forms found there. Herbarium records are also valuable in locating places where unusual plants are found.

You will probably be surprised at the number of areas which you can locate. Allen County is essentially an urban county. It is the county in which the city of Fort Wayne is located. Yet in this populous area we have located about a dozen unusual and undisturbed areas. Some of these are quite large. One, a sand dune area together with a marsh in the Pleistocene outlet of glacial Lake Maumee, covers over 400 acres. Another is a bog of about 20 acres which is still undisturbed and which was visited by most of the outstanding botanists of Indiana. It still has the orchids and unusual plants that they reported; indeed, one which Deam reported as

having disappeared is growing there once more. Both these areas are within a few miles of the city limits of Fort Wayne!

Once these areas have been identified, and it has been determined that they are still relatively undisturbed, the teacher ought to spend several afternoons in carefully going over the areas and identifying the plants, animals, and unusual geological features of the area. He will probably find it helpful to search the literature to determine what others have found in these areas. It is quite likely that the area has been visited by earlier biologists. For this the proceedings of the state academy of science are valuable. The teacher may find identification procedures tedious, but they are very rewarding. It is a real thrill to find an unusual plant or animal in such an area.

Such a resource, once identified, ought to be used. It goes without saying that if you are to take a class on a field trip to such an area you will want to secure permission from the owner. Ownership can often be determined by inquiring of nearby residents. Ownership information is also available in the county tax offices. It is imperative that before you take a class to a given area or do extensive study of the area yourself you secure the permission of the owner. This is not only a legal requirement; this is ordinary courtesy. Usually it is best to make the first approach to the owner in person. He will probably receive you cordially and be happy that you have found something unusual on his property. Occasionally you will find owners who are suspicious or who see commercial possibilities in what you have found on their property. But usually you will find the owners willing to permit access to their property if you assure them that no damage will be done. Areas that are valuable for teaching purposes are rarely of commercial value or agricultural value. The chief problem is that of access to the area which may involve going across a farm or some other area where damage might be done.

If you are to use an area, you ought to make careful preparations for visiting it. I am sure that you realize field tripping takes more preparation than traditional textbook teaching. One of the reasons why many teachers find field tripping so frustrating—and it certainly can be that—is that they do not prepare

adequately for the experience. The teacher must be thoroughly familiar with the area. He must know what plants and animals he will encounter there and where the best examples are to be found. By getting this information he can pass up the poorer examples in favor of the better ones. He must know exactly what his objectives are, otherwise he spreads himself too thin. It won't do to try to cover everything on a single field trip. Better to concentrate on just a few items than to try to cram in a great many.

Probably the most important thing is the preparation of the students. They must know what your objectives are, and they must make them their own. Unfortunately, too often a field trip is regarded as a picnic and not as a learning experience. Pupils tend to regard it as a reward for satisfactory conduct rather than as a part of their education. We are so accustomed to textbook learning that our pupils find it hard to believe that we are serious when we propose another type.

Thus far we have been speaking of natural areas as community resources. There is another resource which ought not be overlooked. This is the neighborhood vacant lot. In almost every community, even though it may seem to be a closed, urban community, there will be some of these. These are usually more accessible than natural areas; transportation and time are less of a problem. Students can make field trips to these over the period of the entire school year to study the phenology of the area. Careful records should be kept; these are valuable for comparison over the years. It is rather surprising the changes that will take place even though the vacant lot is surrounded by a skyscraper jungle and appears to be widely separated from any feeder area.

Public parks are another resource that ought not be neglected. The less heavily used and the less carefully kept parts of the park are most valuable for teaching purposes.

Another resource that the teacher ought not neglect is the school ground itself. Indeed, the science teacher should make every effort to see that a resource is provided here. Nature Conservancy has a fine series of bulletins suggesting how this can be done. There is every reason to believe that a large number of schools will be built in the years to come. Adequate space will probably be provided. If

the science teacher is not consulted in the planning, he should ask to be consulted. It is not too difficult to have an area set aside as an outdoor laboratory if it is so planned from the beginning. He will find those who will want to landscape the entire grounds, and he will have to plead for his outdoor laboratory. But it can be a very valuable teaching resource, just as important as the science laboratories which are built into the school.

It seems to me that teachers have another very important responsibility, and that is to assist in the identification and preservation of natural areas in the community in which they are teaching. Most of us are aware of the importance of conservation; many of us have had conservation courses. Sometimes I think conservation has been done a disservice by requiring a course in conservation for certification in some states. My experience leads me to believe that it is harder to sell a required course than an elective and that it is harder to teach a required course than an elective. Inevitably in a required course some students are just putting in time and serving their sentence. I don't believe that conservation has been helped by making it a certification requirement.

In any case too many teachers are passive so far as conservation is concerned. They know what the government, big business, forestry people, farmers, and ranchers should do, but they don't know what they can and ought to do. I can't understand why teachers are not in the forefront in assisting in conservation on the local level. My own experience has been a disappointing one. Allen County Reserves, Inc., which was founded to set aside natural areas in northeastern Indiana, has been in existence for almost a year and a half. We have had some success; we have a membership of 125 and own a 43-acre tract of almost virgin land. We are in the process of acquiring two more areas. I thought that we would have a great deal of support for our program from biology teachers, but up until now the response has been disappointing. I am afraid that a great many teachers know what others should do and even what they should do, but very few of them are doing it. I wonder how many biology teachers belong to Nature Conservancy, the national organization which concerns itself with setting aside natural areas.

I know that teachers are busy. I know there are many requirements that are made on their time. I know they have responsibilities as professional educators. But it seems to me that they also have responsibilities as professional scientists. I wonder whether this responsibility should not receive more attention. Biology hasn't yet the prestige that physics and chemistry have today. Progress is being made; the AIBS is one important step in this direction. It has done much to gain status for our profession. But we still have a long way to go. We cannot do this by imitating the other sciences. They are essentially laboratory disciplines. Laboratory work has its place in biology, but there is another important area that must be studied and that is nature as it is. "Study nature, not books." That dictum of John Burroughs deserves attention by biologists today. Some teachers, I find, are reluctant to go outside the classroom, while I find it difficult to teach biology without going outside the classroom. Active steps to preserve these outdoor laboratories weren't too necessary a generation ago. For one thing, a substantial number of our pupils were acquainted with the out-of-doors. Then, too, undisturbed areas were all around and were readily accessible. But today such undisturbed areas are rapidly disappearing. It seems to me that members of our profession ought to be in the forefront in assisting in identifying and preserving these areas. I am convinced that organizations on the local level are most effective. I hope that biology teachers will take a more active part in the work of these various community organizations.

Wheat

An important new use for wheat—as a research tool to improve fumigants, separate air pollutants, and diagnose gas poisoning—may result from the discovery of its unique absorbing properties. Wheat has the ability to absorb different types of gas at varying rates, making it possible for chemists to separate and chart gas distribution patterns, according to Ben Berck, a chemist of the Canada Department of Agriculture, Research Branch, Winnipeg, Manitoba.