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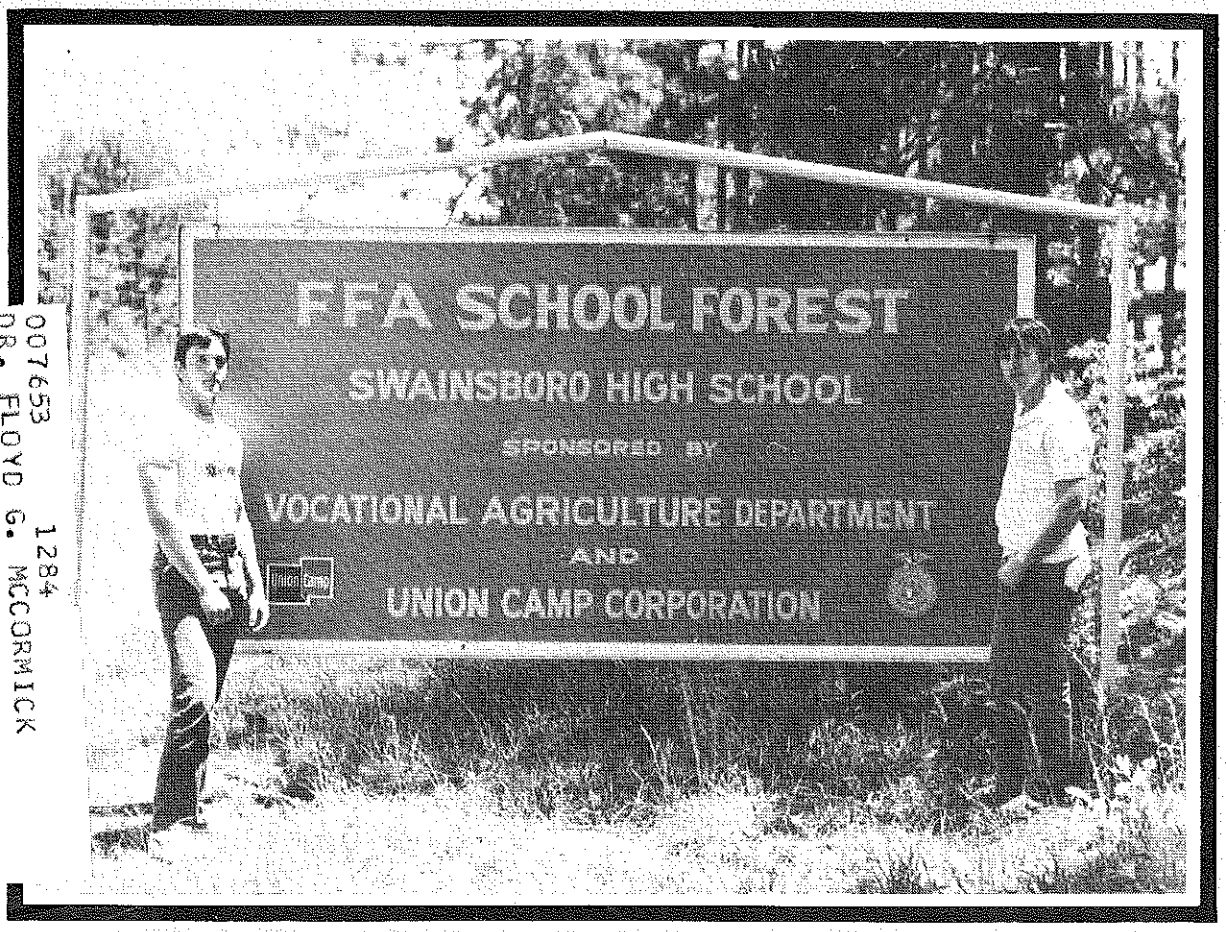




## THEME

## SOEP: Forestry, Conservation and Recreation

THE
AGRICULTURAL EDUCATION
MAGAZINE

October, 1984 Volume 57 Number 4



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Articles and photographs should be submitted to the Editor, Regional Editors, or Special Editors. Items to be considered for publication should be submitted at least 90 days prior to the date of issue intended for the article or photograph. All submissions will be acknowledged by the Editor. No items are returned unless accompanied by a written request. Articles should be typed, double-spaced, and include information about the author(s). Two copies of articles should be submitted. A recent photograph should accompany an article unless one is on file with the Editor.

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EDITOR'S PAGE

# The New Eliticism

BY LARRY E. MILLER, EDITOR
*(Dr. Miller is a Professor in the Department of Agricultural Education at The Ohio State University.)*

The roots of the history of education were anchored in a tradition for the elite; the affluent. Those with social position and financing were able to provide an education for their children. Those educated were more nearly able to maintain their wealth, social position and the positions of political power.

Idealism and essentialism became the predominant educational philosophies which provided education for education's sake. The basics of this philosophical era provided lots of memory work to exercise the mind, e.g., the study of Latin; and mathematics to teach logic. Out of this arose discontent and charges that education lacked relevance to real life. Pragmatism arose under the advocacy of James, Dewey, et al. These philosophers advocated a relevant approach to education.

Vocational education emerged as an outgrowth of the pragmatists. Prosser and numerous early vocational educators built a foundation that has served to give relevance to learning. Hundreds of others have built upon this educational philosophy and delivered educational programs beyond the level of expectations of even its earliest instigators.

Vocational agriculture provides more than just skills. The psychomotor skills are just complimentary to the cognitive abilities and knowledge provided. The problem solving processes so inherent in the vocational agriculture program provide a thinking process which can be utilized through one's lifetime even as the technical knowledge changes. Learning is also well documented in the affective domain. Attitudes of students toward life and work are affected. Many a silk purse has emerged from the proverbial sows' ears. The impact has been noteworthy as the program has contributed to the success of many lives and aiding many to contribute to society who would otherwise have been dependent upon it for support and livelihood.

The pendulum of educational philosophy, eddied by several of "the reports" and proponents of the eliticism, has begun to swing back toward idealism. This is evident in the states which have raised the number of units required for graduation. The creation of dual levels of high school graduation; the requirement of foreign languages, more mathematics, more sciences and English; the increased requirements for admission imposed by numerous universities are all indicative of the swing of the pendulum. A new eliticism emerges. Academic ability instead of social class provides the dividing layer.

## The Cleft

The result will be a widening of the gap that already dicotomizes education: the college-bound and the others. Vocational education in agriculture is among the others. Foresaken is the possibility that vocational agriculture has much to offer the college-bound. Where is there a better training ground for the professionals in agriculture which will provide the future research scientists, vocational agriculture teachers, college professors, veterinarians, *ad infinitum*? The stigma already commonly associated with being a student of vocational education may become more astute.

The prospective agricultural student with an aptitude for academic pursuits will face many barriers. The stigma is one. The general educational tone advocated by other teachers, administrators, guidance counselors and, in some cases, even parents will be very persuasive. The teacher of vocational agriculture will have to speak clearly with fact and sound logic to show each prospect that vocational agriculture is a program in which they can participate.

## Being Flexible

The teacher of vocational agriculture, however, cannot do it alone. A united effort of all vocational educators, and others in elective areas in the school system, can be brought to bear to influence policy. Among the policies to affect can be the number of periods in the school day. This would provide students with greater flexibility.

Policies related to vocational agriculture should also be examined. Policies that require multiple periods of instruction for vocational agriculture need reconsideration. If the length of instructional time is shortened, then professionals must closely examine the instructional priorities. Any detrimental effect on the student must be minimized.

Alternatives must be thoroughly considered. To remain resolute in preserving the status quo would not work to the benefit of the students we serve. Quality can be maintained even in the face of program alteration.

For those steeped in the philosophies of vocational education, an educational system geared to accomodate only the academically able, the elite, is contrary to their principles. We grant that a quality education is needed for students. Efforts to improve quality are applauded. The quality must be provided to all students! The vocational student deserves the highest quality, too. Likewise, the academically talented student can find that vocational agriculture has much to offer.

Creating a widened breach within education between the college-bound and the remainder of the students will be detrimental to education. The morale of students and teachers will suffer.

Catering to the needs of the most academically able will likely be the preponderant emphasis of education in the short run. If history offers any lesson which can be of consolation, it is that most educational changes are cyclic. The pendulum may swing back as pragmatic concerns re-emerge for the provision of an education for all. The profession will need to bend to accomodate the current constraints placed upon it at this end of the swing of the pendulum.

THEME

# Megatrends Without Agriculture?

By Carla A. Kirts, Theme Editor

*(Editor's Note: Dr. Kirts is an Assistant Professor of Agricultural Education at the University of Alaska, Fairbanks, Alaska 99701.)*

John Naisbitt's bestseller, *Megatrends*, has something to say about agriculture; ironically, however, he does so without saying anything about agriculture. As such, the implications for the future of agricultural education are profound.

In his futuristic essay, Naisbitt describes and discusses ten major transformations he perceives the United States is currently undergoing. Throughout the 333 page "road map to the 21st century", as it is called by the *American School Board Journal*, there is little mention of agriculture with the exception of a few examples of genetic engineering and exotic food production.

The failure to discuss the role of American agriculture in such a major (or at least, well publicized), futuristic essay is a rather blatant example of the lack of the public's perception of how the agriculture industry has significantly influenced our national economy and lifestyle. This raises several questions. Has the value of agriculture, in sustaining our standard of living, including utilization and management of all renewable resources, been overlooked as the foundation of our strength and security as a nation? Have the two to three percent of the American population directly involved in agricultural production become so efficient and inconspicuous that the food and fiber they provide the other 97-98 percent of the population has been taken for granted? Has American agriculture become America's "hidden industry"? If agriculture is to take a "back seat" in the future, must agricultural education follow suit?

## Time for Alarm?

On the one hand, the attitude and concepts Naisbitt expresses (or fails to express) regarding the role of agricultural production in the future of the U.S. is alarming. How could an individual whose insight compels him to write such a profound essay on the future have escaped mentioning agriculture? Will the production of food and fiber in sustaining life be any less important in the future, regardless of the efficiency with which it is produced? Of course not. However, because most Americans are far removed from direct contact and association with agricultural production, know very little about agriculture and renewable resources management, and represent the majority vote in electing policymakers, who direct future trends, further development of the agriculture industry may be difficult. As such, agricultural education is justified today more than ever, not only for the purpose of preparing future agriculturalists, but in a broader sense, educating the general public on agricultural concepts and issues. To accomplish this, agricultural education must be viable and visible.

On the other hand, Naisbitt describes in great length how the U.S. is currently experiencing "growing pains" in response to a transgression occurring as the U.S. shifts from an industrial society to an information society. Information is of little value unless it is disseminated and successfully communicated to the intended user. Because agricultural education is an information/communication business, Naisbitt's ideas readily apply. Agricultural educators must provide instruction through various, appropriate channels which is current and relevant to today's agriculture industry.

## No Profession Is An Island

As the world in which we live becomes more technologically advanced, one might assume that the role of vocational education, at least for efficiency's sake, might involve the preparation of specialists. Early American education was attacked for catering to the generalist's view of the world without regard to providing students with a salable skill upon graduation. In response, since the Sputnik era, education has tended to emphasize specialization. Within the last several years, several notable educators have published essays warning of the dangers of providing overly specialized education. In fact, one Northeast accreditation association specifically delineates agriculture as a discipline in which this is occurring. Releasing narrowly-based specialists into the world of work is akin to sending wool-blind sheep out on the range; they may be able to find forage if it's at the end of their noses, but they may never see the wolf that's going to get them.

Somewhere between these two extremes, generalists versus specialists, is a "happy medium". As the U.S. progresses through a technological era, the need for individuals who can function within a specialized society must be balanced with their ability to work within a multidisciplined work arena. As advanced technology unravels, the interrelated complexities of the world in which we live, especially evident in the natural sciences, the multi-disciplined team approach to management and resolution of today's problems has become more appropriate. Employees must not only know their own job and be able to perform it well, but also should be familiar, at least, with related disciplines.

## Natural Resources Management Multidisciplined

The interrelatedness of disciplines is particularly evident in natural resources management. Examples of disciplines within the scope of natural resources management include forestry, conservation and outdoor recreation, the theme topics of this issue.

As an instructional priority, graduates of vocational programs should be prepared to perform a specific job, such as forest mensuration; however, not to the exclusion of at least a basic awareness of related disciplines such as logging, forest ecology, and forest products. While this is true at the technician level, it is especially evident at the professional level (an occupational avenue which must not be excluded as an option for graduates of vocational programs). Vocational instruction must be multidisciplined because the real world of work is multidisciplined.

## SOEPs Fit the Bill

Thus far, a case for vocational agriculture to be viable, visible, current, relevant and multidisciplined has been presented. Although seemingly an insurmountable objective, vocational agriculture has a tool with which to shape a student's career while considering all of these parameters — the Supervised Occupational Experience Program (SOEP).

First, consider viability. Vocational agriculture exists because there is a need, and will continue to be a need, to prepare individuals for the world of work involving the production of food and fiber for the benefit (subsistence and leisure) of humankind. SOEP is the avenue through which students are provided with an individualized opportunity to gain practical experience in the skill areas necessary to become a part of the food and fiber production industry.

SOEP is also visible as an extension of the traditional, enclosed classroom into the local community. As such, the public sees what the local vocational agriculture program is accomplishing. Perhaps just as importantly, because adults tend to notice and inquire about the activities of youth, local citizens, even those not involved in any direct manner with agriculture, become more aware of agriculture as a viable industry.

Maintaining currency in an instructional program, especially in the sciences, is an elusive goal; however, vocational agriculture has a practical means of accomplishing this goal through SOEPs. What could be more current than providing each student with an opportunity to experience the world of work as it exists today through projects and placement?

At this point relevancy is almost irrelevant; it "comes with the territory". If SOEPs are carefully designed to be an actual application of concepts and techniques discussed in class, and if the curriculum has been continuously modified to account for changes in technology, SOEPs are inherently relevant.

Last, but not least, the multidisciplinary role of education must be addressed. Understandably, natural resources management is a case in point. Management of natural resources exists only because there is a perceived obligation to utilize a particular resource base to satisfy some human need or desire. That is, a forest may be managed for the purpose of providing one or more of the following "products": logs for home construction, wildlife for subsistence, esthetics and/or sport, and outdoor recreation opportunities for utilizing leisure time.

Within the pages of this issue, perhaps Tony Gasbarro stated this concept most precisely: "foresters manage people, not forests". This is one of the best examples of the multidisciplinary aspects education, particularly vocational education, must address. Exceptional proficiency in cruising timber is significantly depressed if the individual is unable to communicate and work with the people for whom the timber is being measured. In addition, an understanding of the product for which the timber will be used and the ecological conditions under which it has been produced may be necessary to compliment the overall sucess of the cruiser's efforts.

Again, SOEPs come to the rescue. For years, educators of agriculture have recognized that everything can not be taught within the confines of a classroom and/or laboratory. Individualized application of the curriculum through projects and placement not only enhance classroom instruction, but also enable each student to experience the real world of work, in all its multidisciplinary splendor. Teaching human interaction skills within a formal setting is difficult, to say the least; however, SOEPs provide what classroom instruction often fails to accomplish.

## In This Issue

Within this issue, "SOEP: Forestry, Conservation and Recreation," vocational agriculture instructors have cited many examples of the characteristics and values of SOEP as discussed in the preceding paragraphs. In addition, to provide linkage with the industry, a major component of the information/communication aspects of vocational education, articles were requested from practicing professionals. One was prepared by a forester, the other by an outdoor recreation specialist. Specifically, each was asked to address the question of how vocational agriculture can best prepare students to pursue occupations in forestry and outdoor recreation, respectively. Thus, readers of this issue would be exposed to current ideas from the perspective of the specialist, one who is dealing with the occupational area on a practical, day-in-day-out basis.

### The Cover

Emphasis on instruction in Forestry in Georgia began in the early 1950's with assistance from the Forest Industry and financial institutions. Most schools have a school forest on which management practices are applied. An attractive sign and well maintained forestry plot near a public road are invaluable for informing the community of the work in vocational agriculture. (Photograph courtesy of Frank B. Flanders, University of Georgia.)

THEME

# Vocational Agriculture and A Position . . . . . .

By Alan Jubenville

*(Editor's Note: Dr. Jubenville is an Associate Professor of Outdoor Recreation Management and Planning at the University of Alaska, Fairbanks, Alaska 99701.)*

The question is, how do we fit recreation management into vocational education? The answer is not simple and straight forward because we do not have much experience upon which to draw. However, assuming that vocation education would primarily be aimed at the technician level, it would seem appropriate to first identify the role of outdoor recreation management and then look at specific program areas in performing that role. One should then isolate those technical facets of the programs that might be implemented by the technician. Finally, one should look at the current vocational agriculture curriculum to determine what competencies are already being addressed and then add course work specific to recreation management.

The role of the recreation manager is to provide sites or opportunities for people to recreate. The recreationists select sites that they perceive will allow them to produce satisfying recreational experiences. The basic management model in terms of production of the site is shown in Figure 1. The model is applicable to both the public and private sectors. The biophysical inputs are the allocation of the natural resource base; the managerial inputs are the allocation of fiscal resources for capital improvements and normal managerial operations such as the resource management programs and visitor services. Regulations are listed separately as they are generally kept to a minimum to allow maximum freedom of choice of the individuals in the use of the resource and interactions with other users. The assumption is that when a regulation is implemented to protect the resource base or reduce conflicts between users, it becomes an essential visitor service.

## Subject Matter

The three categories of managerial inputs are essential to the discussion of how vocational education can address recreation management needs are: physical development, visitor services, and resource management. The typical program emphases for each category are:

**Resource Management**
- Turf management
- Horticulture (native and exotic shrub species)
- Arboriculture (intensively managed sites)
- Forest management (management of the forest ecology)
- Erosion control
- Fire management (including monitoring and suppression)
- Entomology/pathology
- Range management
- Wildlife habitat management

**Physical Development**
- Road development
- Light construction
- Sewer and water systems
- Solid waste systems
- Facility maintenance
- Use and repair of equipment
- Surveying

**Visitor Services**
- Information/public contact
- Public relations
- Public safety/first aid
- Search and rescue
- Law enforcement
- Specialized audio-visual equipment
- Special populations

Most vocational agricultural programs already emphasize much of the subject matter under the resource management and physical development categories, usually aimed at the technician level and oriented to the particular conditions of the region. There are numerous examples of current program training experiences that would benefit the recreation management technician, such as erosion control projects, farm road construction, wildlife habitat improvement, and so on.

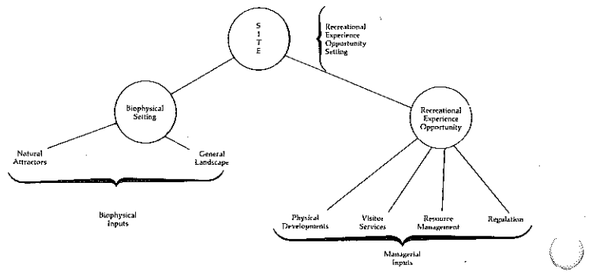


**Figure 1. Inputs Into the Production of the Site, or Recreation Experience Opportunity Setting.**

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THEME

# Recreation Management . . . . . A Reaction

By Ramsey M. Groves

*(Editor's Note: Dr. Groves is Associate Professor and Head of the Agricultural Education Section of the Vocational Education Department, Colorado State University, Ft. Collins, Colorado 80521.)*

In reaction to Alan Jubenville's article on Recreation Management, the question arises as to how to design the program to properly prepare workers for occupations in this area. To do so, one must take an idealist approach and then decide where, and if, existing vocational agriculture programs can provide some or all of the preparation. Where preparation cannot be provided in this manner, a specialized training program must be planned and probably designed for individualized instruction. However, if the majority of the program is specialized and if sufficient students exist, it would be best to provide a specialized program for those students who have occupational objectives in such a field.

## Employability Training

Based upon accepted principles of vocational education, the following steps should be accomplished to insure employability of those being trained.

1. Determine the kinds of employment available and the number of potential positions on an annual and long term basis.

A. Employment: If an industry survey indicates that there are positions for which vocational training can provide preparation, then we have a case for planning a program. If Jubenville is correct in his assumption that many of these jobs are seasonal and are grabbed off by unemployed college students, then we do not have much of a case for any vocational program. On the other hand, if he is also correct that many of these opportunities fall in the realm of private enterprise, or in another sense entrepreneurship; then we should look at training the land owner through Young or Adult Farmer Programs. In this manner, we would have the training put into practice immediately since they would obviously have the resources and desire or they would not participate. Decisions, decisions: we need valid input before we can make them!

B. Numbers of positions: Having determined the scope of the industry, we must ascertain the numbers of replacements needed annually and for at least five years. As we plan a long term program, we need to determine future additional jobs to better help students make occupational choices.

2. Determine the skills or competencies needed in those job titles most likely to become part of the vocational training program.

A. Develop survey instrument(s): Following the plan developed for the National Agricultural Competency Study, we should involve industry representatives in writing job descriptions, listing task areas and identifying probable competencies needed to accomplish tasks identified under each job title. Dr. Jubenville suggests several general knowledge areas which could assist an industry committee in identifying tasks and competencies.

B. Determine scope and importance of tasks and competencies: Again, following the plan for the National Agricultural Competency Study, a representative sample of industry people should be asked to rate the importance of the competencies identified. They should also be asked to identify additional job titles, task areas, and/or competencies that were not included in the original survey instruments. Summarization of data from the respondents will indicate the degree of importance of each of the competencies identified and will be an aid in planning the program.

3. Determine the scope and sequence of the curriculum: Dr. Jubenville's article suggests that exposure to many subject matter areas will provide knowledge from which the worker can accomplish the tasks. However, as was found after the implementation of findings from the National Agricultural Competency Study, the best approach is to develop the curriculum around the task areas for each job title. As a result, a vocational program provides training in a sequence which makes the individual capable of doing the job. Such an approach also provides an incentive for students when they can see job development in the curriculum. Instructors will also tend to limit their teaching to the important areas of job preparation and minimize the use of "nice-to-know knowledge". Assistance of an industry advisory committee will keep the curriculum valid for meeting employment needs.

4. Determine the facilities and equipment needed to provide instruction: Through inputs from an industry advisory committee, we can identify facilities and equipment necessary to deliver the curriculum. They will also identify where the industry can best accomplish the training when availability of necessary facilities and equipment is likely to be limited in the educational setting.

5. Determine how to provide students a means for applying the competencies being learned: Some form of on-the-job training (O.J.T.) becomes essential as Dr. Jubenville suggests.

A. Co-op placement, or O.J.T., which involves training

*(Continued on Page 9)*

## A Position . . .

(Continued from Page 6)

While the goals in the development of the recreation site may be somewhat different than traditional agriculture or forestry, many of the necessary skills and technical operations taught in current programs are the same. The unique facets to be added to the traditional program would be under visitor services: public information, safety, law enforcement, etc. The technical aspects of these would be taught in the classrooms and laboratories of the public schools. However, the practical aspects of visitor services can only be fully developed through supervised on-the-job training. The further along one is in the vocational education program, obviously the greater the emphasis on the supervised on-the-job experience. Thus, the present vocational education structure in the schools could easily include recreation management in its curriculum by including some recreation examples/demonstrations within the traditional subject matter areas, specific units on visitor services, and supervised occupational experiences in recreational settings.

### Training Options

This type of program has the potential to lead to three different vocational options for the individual student: 1. four-year university program (the practical experience is helpful to understanding some of the classroom material as well as experience toward later employment); 2. technician level employment (entry directly into the work force); and 3. private enterprise (either as primary or secondary income). While not looking to bolster enrollments at four-year institutions, the vocational educational experience would be highly desirable for recreation management students seeking higher degrees. Most students, after receiving the B.S. degree, find that it is the experience beyond the degree that gives them the edge in employment.

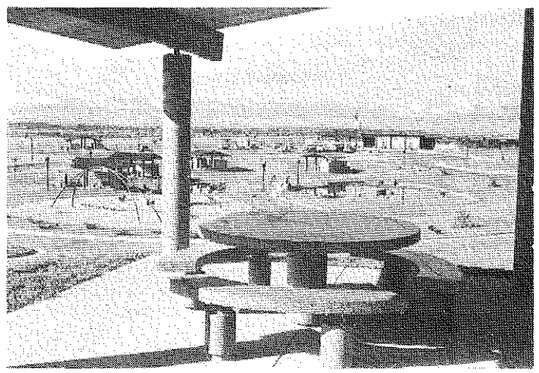
The technician level employment has some potential, but often these jobs are summer only and readily grabbed by the unemployed college student. However, the potential could be realized in the more temperate climatic zones closer to urban areas. Local government, state government, and the private sector have usually developed permanent technician positions where the season of use is more than just the summer, and the pattern of recreational use is sufficiently high to warrant full-time or at least extended seasonal technician positions. Examples would include greenskeepers, zookeepers, park maintenance techicians, and ranger patrols. Even some of the agencies in the northern zones are beginning to use full-time technicians to deal with expanding winter use through snowmobiling, cross-country skiing, etc. Even in Alaska, many seasonal positions at state and local levels are being extended through the winter season. The supervised occupational experience should focus on the potential job market within the region.

Private enterprise is certainly a golden opportunity where the farm or ranch can be used or converted to use for commercial recreation purposes — a pay-as-you-go affair. Some farmers and ranchers are looking at this as either a primary income or as a secondary income to production agriculture. With the proper focus to the program and good marketing of the services, new sources of income can be developed. Too often though, this process has been a trial-and-error one. Some succeeded while many failed. Again, well-designed, supervised occupational experiences, coupled with some practical business exposure, will improve success. The traditional farm management units in conjunction with some specialized marketing information should be the minimal business preparation.

### Implications

What does this mean for the typical vocational agricultural education program? Should they get into the recreation management business? This should be determined by evaluating the needs of the region and identifying the potential employment for recreation management technicians and farm/ranch-related commercial recreation businesses. One may be able to tap a heretofore undeveloped occupational market with some minimal addition/reorientation of the existing vocational agricultural education program, plus some "leg-work" to develop the supervised occupational experiences. There would not be a simple standard curriculum; the emphases would reflect the market to which the program is oriented. However, all programs ought to emphasize, under Visitor Services, public relations and public safety.

A group shelter in Western Iowa which was designed for group participation and minimal maintenance.



A large Wyoming visitor center and day-use facility which would require intensive management.



## A Reaction . . .

(Continued from Page 7)

experience in industry, will be the most suitable for students who have no other means to make the actual application. This must be an organized program directed by the instructor in cooperation with a work/training industry supervisor and involving students and parents in planning and training.

B. Supervised occupational experience programs based in a family operation will be the most suitable for students whose objective is to plan and operate their own recreational business. The instructor must work closely with parents and students in planning and carrying out experiences which will provide application to knowledge and skills gained in the vocational programs.

C. Related and individualized instruction is also feasible: As a part of the instructor's job, one should, through supervisory visits, identify additional areas where students need help. Instructors can provide this through related instruction in the curriculum or on an individual basis during supervisory visits. Some of these student needs may be met through assistance of the training supervisor and as a result should become part of the training plan in co-op situations.

### Summary

Dr. Jubenville's article provides a good starting point for dialogue between vocational personnel and industry representatives. This outline suggests ways in which dialogue can be directed. However, the outline does not touch all the areas that need direction and discussion. For example, his article suggests that there may be several levels of instruction involved. This implies that there is a need for articulation between these levels. There is also a need to identify ways to solve problems through program review and evaluations after such programs have been implemented.

In summary, this reaction article has treated many aspects of Prosser's Theorems for Vocational Education[1], but not all of them. Prosser's Theorems should all be reviewed for applicability in the area of Recreation Management. Particular attention should be paid to the sixteenth theorem which paraphrased says, "If you can't do it right, don't do it." If vocational education is to continue to be a viable and valuable part of our educational system, we must do it right for those who "want it, need it and can profit from vocational education."

**Reference**

[1]Roberts, Roy W., VOCATIONAL AND PRACTICAL ARTS EDUCATION, 1971. Harper & Row, 3rd edition.

## BOOK REVIEW

COMMUNICATION STRATEGIES: A GUIDE FOR AGRICULTURAL CHANGE AGENTS, Herbert F. Lionberger and Paul H. Gwin, Danville, Illinois: The Interstate Printers & Publishers, Inc., 260 pp., price $8.95

For the agricultural educator looking for a readable, comprehensive discussion of the change process and strategies for planned change, COMMUNICATION STRATEGIES by Lionberger and Gwin is a must. The author's extensive experience in the field shines through as voluminous, often complicated research findings, theories and concepts of the change process are molded into easily understood, usable ideas.

The nine-chapter guide (as the authors call it) break the concepts of change, dissemination, diffusion, linkages and innovation into digestable pieces. The guide begins with an overview of the chapters, proceeds to talk about change agents, discusses variables affecting change within communities, delves into systems for dissemination (personal, interpersonal and social) and suggests used of dissemination research. There is also an extensive discussion on the mass media channels and how to effectively use them in stimulating change.

The annotated references at the end of most chapters provide an excellent source for supplementary reading. The references are a blend of publications from the stalwarts in the dissemination/diffusion field (Rogers, Havelock, Mosher, Lionberger) and from other authors in related fields such as group processes, communications and international development.

In addition to the bibliography, a 10-page glossary of terms exists to help clarify terms that might initially be confusing or unknown to the reader. The guide is thoroughly indexed which should aid those using it as a reference.

While the guide was primarily developed for use by extention agents (and for classroom training of extension agents), it would also be a useful text or supplementary reading test in agricultural teacher education programs for agricultural teachers are often placed in such change agent roles as promoters of agriculture, awareness builders, local leaders, information carriers and gatekeepers. Understanding and effectively using the change strategies could help agricultural teachers perform their roles more efficiently, more effectively.

Rose L. Jones
Agricultural Education Dept.
Iowa State University

HERBICIDE RESISTANCE IN PLANTS, edited by Homer M. Lebaron and Jonathan Gressel, John Wiley and Sons, Inc., 1982, 401 pp., $47.50.

This book deals primarily with herbicide-resistant biotypes, their origin, and their taxonomical and physiological nature. The methods of testing herbicide resistance, and mechanisms of selectivity and control are some of the topics for discussion.

The positive benefits of herbicide-resistance in relation to research methods for genetically conveying resistance in crops or transferring this resistance from weeds to specific crop species are emphasized.

HERBICIDE RESISTANCE IN PLANTS is an up-to-date, comprehensive collection of technical terminology and pertinent research in the area of weed science. This book would be an excellent reference for plant breeders, crop specialists, weed scientists, genetic engineers, and all those interested in the biochemical and physiological aspects of resistance in weeds.

Tara Lane Sunderhaus
Iowa State University
Ames, Iowa

THEME

# Vocational Agriculture

## A Position . . . . . .

By Anthony F. Gasbarro

*(Editor's Note: Mr. Gasbarro is an Extension Forester with the University of Alaska, Fairbanks, Alaska 99701.)*

As a forester I was asked by a vocational agriculture educator how vocational agriculture programs could best prepare students for occupations in forestry. I will try to answer this question by discussing the concepts, subject matter and the skills that I think every student should have when he or she completes a forestry program. My ideas and suggestions are not based on having experience with agriculture education, but on what I perceive should be included in a forestry curriculum from the perspective of one working in the profession of forestry.

Let's first discuss the paths that a high school graduate with vocational agriculture forestry training might take into the field of forestry. Perhaps the most popular path to follow upon graduation is to seek work as a forest technician with a public or private forestry organization. A second possibility would be self-employment in a wood products business such as operating a small sawmill, post treating plant, or contract log hauling. A third option would be to seek employment as a woods or mill worker with private enterprise. Another opportunity that should be considered would be to pursue further education leading to an associate or a professional forestry degree.

The vocational agriculture forestry curriculum should give the student the flexibility to pursue any of the above options. Furthermore, it should give him/her the capability to adjust to change. Forestry is not escaping the accelerating rate of change that is affecting all aspects of our lives. New technologies and increasing social and economic demands are bombarding the forestry profession. Individuals at every level of the profession will need the capability to be able to respond to changing demands. Concepts, subject matter and skills taught in the vocational agriculture forestry program should have, as much as possible, wide applicability.

### Curricular Concepts

Given the options that should be open to the forestry graduate and given the propensity of this world to change, what should the curriculum instill? Some of the key concepts that I think should be taught in a forestry program are:

- The world in which we live is an interdependent system.
- Foresters manage people not forests.
- Human decisions and activities influence the future of forests.[1]
- A safety attitude must pervade all activities.
- The forest is a functioning ecosystem.[1]
- Forests play an important role in maintaining life on earth.[1]
- Forests can be managed to meet various needs of society.[1]

It is not the purpose of this article to discuss how these concepts should be introduced into the curriculum, but let's clarify each briefly. The interdependent world concept should introduce the student to the interrelationships between the international, national, regional and local forest products trade. Forest practices and development strategies in other countries and other regions of the U.S. effect the supply and demand of at least some forest products in every part of our nation.

"Manage people not forests" is an overstated concept but it makes the point that, particularly in local areas, the success forest managers have in dealing with people will determine how successful they are in applying management programs in these areas. It is essential that employees be able to answer, in a knowledgeable and courteous manner, questions or address concerns which may arise because of a management action.

Human decisions and activities influence the future of forests. Every student going into the profession of forestry should have an understanding of how human decisions made in the past have influenced the current availability and productivity of forest lands. They should understand that the amount and types of future forests will depend in part, on the level of products and benefits users demand. Furthermore, the future of forest resources is largely determined by human decisions implemented through political, economic and social processes.

The concept of safety should be stressed throughout the entire program. Students should be given a comprehensive safety manual similar to the one used by the U.S. Forest Service that covers most of the activities they will undertake at school or encounter on the job. It should be taught that every job has its inherent hazards and that these hazards should be identified and dealt with accordingly.

Understanding the forest as a functioning ecosystem is basic to knowing how to apply silvicultural practices. Students should know what an ecosystem is, its biotic and abiotic components, and the processes that occur within a

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THEME

# And Forestry

## . . . . . A Reaction

By Tony Kennedy

*(Editor's Note: Mr. Kennedy is a Vocational Agriculture Supervisor for Southeast Oklahoma, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074.)*

With over 750 million acres of forestland in the United States, we in vocational agriculture cannot afford to stick our heads in the sand and say that forestry is not an important part of agriculture. We need to listen and learn from forestry professionals and the forestry industry and prepare our students to take advantage of the opportunities available in forestry.

### Career Awareness

As a follow-up to Gasbarro's article, there are some questions raised as we look at the application of his ideas.

How are we challenging students to consider all of the types of jobs available to them in the forestry industry? Students will be better served in our vocational agriculture programs if they have a strong knowledge of the advantages and disadvantages of the broad career fields. The student needs to be made aware of the increased potential of career opportunities offered when additional formal education is added to the knowledge and skills gained in the vocational agriculture program.

A vocational agriculture teacher needs to invite forestry industry people into the classroom to tell students directly what specific jobs are available and the types of careers. I would also want students to study the trends in the forestry business and then determine their options.

### Safety

How can job safety become a part of each forestry lesson taught? In a vocational agriculture program, safety begins with an attitude. If safety is not stressed in vocational agriculture laboratories and in all areas of the Supervised Occupational Experience Program, then it will be unlikely that students will be more aware of safety in the forest.

A special FFA safety program conducted for the local community would be a big step in developing an attitude toward safety that would carry over to the total vocational agriculture SOEP. If the students try to teach the community about forest safety, they will end up knowing more themselves.

### Other Skills

How can the vocational agriculture forestry student learn to work with people and communicate effectively? By taking part in an active FFA chapter and working on FFA leadership skills, students seeking a career in forestry can improve and develop the skills needed for working with people and effectively communicating with the public.

I would also recommend that each vocational agriculture program in a forestry area consider taking part in the National FFA Forestry Judging Contest, as the skills involved in this contest will help meet the needs of the forestry industry. This contest can be a motivational tool for students and can serve as a way of involving local forestry personnel in the vocational agriculture program.

How broad should the forestry education in vocational agriculture be? Forestry should be looked upon as a part of the total agriculture industry in the United States. When studying each area of the vocational agriculture curriculum, forestry and its relationship to the local community and the national economy would help build the total educational background of the student.

### 1985 THEMES

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|---|---|---|---|
| January | International Agriculture Education | July | Planning, Organization and Time Management |
| February | Vocational Agriculture and the Handicapped Student | August | Evaluation of Vocational Agriculture |
| March | Innovative Student Management Strategies | September | The Teacher of Vocational Agriculture |
| April | Using Microcomputers in Agricultural Education | October | Elementary and Pre-Vocational Programs |
| May | FFA Conventions and Contests | November | Teaching Tips |
| June | The Supervisor: Local, State and National | December | Future Programs in Agricultural Education |

## A Position . . .

*(Continued from Page 10)*

forest ecosystem. They should understand why forest ecosystems differ from one another and how trees within these ecosystems grow, reproduce, and function in the entire system.

The concept of the role of forests in maintaining life on earth will provide the student with knowledge as to the role forests play in the earth's natural systems and cycles. The student will also understand the role of the forest in providing habitats for plant and animal life.

Forests can be managed to meet the various needs of society. This concept will provide the student with an overview of the many products that the forest can provide including both those that come from trees and from the forest land itself, such as opportunities for non-consumptive human activities, wildlife and forage. It will also give him/her an understanding of the various silvicultural techniques and other practices employed to meet these needs.

### Subject Matter

Based on the concepts discussed, what subject matter should students learn and what should they acquire to be able to apply both concepts and subject matter in their future occupations? Without getting into too much detail, I have prepared Table I which contains general subject matter and skills related to each of the concepts. The list of skills is not exhaustive. The depth to which subject matter and skills are developed in any specific program will depend upon the perceptions of the instructor, the goals of the students involved, and other local conditions. However, the overall purpose should be to introduce the student to as many of the concepts and related subject matter and skills as possible. As such, a broad background will provice flexibility in employment or other future directions.

Table 1 - Components of a Vo-Ag Forestry Program

| Concepts | General Subject Matter | Skills |
|---|---|---|
| Interdependent World | World forest products trade<br>National & regional forest industries<br>The local forest products industry | Locating current literature on the forest products industry<br>Acquiring information through telephone & other surveys |
| Manage people not forests | The value of good public relations in the practice of forestry | Public speaking<br>Writing press releases &/or a vo-ag forestry newsletter<br>Preparing radio/tv public service announcements |
| Humans influence the future of forests | Forest history of U.S.<br>Forest land use<br>Trends in wood use<br>Political, social & economic processes in forestry<br>Management agencies & careers | Keeping informed on current public events that affect forestry<br>Assessing forest land use<br>Participating in forestry decision making processes |
| Safety | Safety on the job | Performing job hazard analyses<br>Using "tail-gate" safety sessions<br>Working safely with forestry equipment |
| The forest as a functioning ecosystem<br>Forests play an important role in maintaining life | Forest ecology<br>Silvics of local tree species<br>Plant and animal identification<br>Forest influences | Use of taxonomic keys<br><br>Interpreting the forest landscape |
| Forests can meet various needs of society | Measuring the forest & its products<br>Applying silvicultural systems<br>Timber harvesting<br>Forest protection<br>Processing & marketing of forest products<br>Managing forest lands for other purposes | Applying math<br>Using maps, a compass; forest measurements & fire fighting tools<br>Using a chainsaw<br>Using a computer<br>Repairing small engines |

Subject matter used to introduce the forestry student to the interdependent world in which we live should focus on the forest products industry at all levels and how they relate to one another. Most of this information should be acquired by the students themselves as they are taught library research skills and are given problems that will require them to call local dealers or survey wood users.

It is important that an individual have public relations skills regardless of the employment position assumed in the hierarchy of a forestry organization. The student should become aware of the value of public relations and acquire the necessary skills by having to speak before small groups, having to inform people about forestry through the written word, and by being exposed to radio and TV.

Subject matter relating to human influences on forests should include both U.S. and local forest history. It should deal with forest land use particularly at the local level and it should introduce the students to the political, social and economic forces that affect forestry. Students should develop the skill of keeping informed about forestry issues in their area. They should learn how to keep abreast of changing forest land uses by learning where to get land use information and how to use that information. Each student should learn how to participate in the forestry decision making process by attending public meetings and perhaps presenting testimony or a written statement. Students can also participate in public decision making by writing to agency heads and legislators or visiting them to discuss particular forestry related problems.

The concept of safety is best taught to students by discussing hazards and safe procedures for every task in which the student will become involved. Students should be trained to perform job hazard analyses, hold "tail-gate" or mini-safety sessions before each field work session, and be instructed in the safe use of each piece of equipment they will use.

Forest ecology, silvics, plant and animal identification and forest influences are the key topics that should be presented to teach the concepts of the forest as a functioning ecosystem and the important role forests play in maintaining life. This subject matter should give the student an understanding of the dynamics of the forest ecosystem and the ability to speculate as to why and how any given ecosystem got to its present state, what changes are currently occurring, and what will happen if various natural or human activities take place. It should give the student an understanding of how the forest interacts with sunlight, air, water and nutrients and provides various wildlife and plant habitats. The student should develop such skills as how to use taxonomic keys in plant and animal identification and how to interpret the forest landscape.

How forests can meet the various needs of people is perhaps a concept common to most vocational agriculture forestry programs. The subject matter and skills relating to this concept probably make up most of the content of such programs. Therefore, I do not think that there is a need to discuss this subject matter or related skills in much detail. The subject matter should focus upon giving the student an understanding of the theory behind many of the activities that will be performed in the field. It should answer such questions as: why are we cruising timber this way?, why are we applying this harvest system?, and why are we concerned about logging slash or a few beetle infested trees? In addition to the standard skills taught forestry students, I think the forestry program should emphasize skills in applied geometry, algebra and trigonometry. I also think that computer skills would be helpful, particularly those related to programming and the processing of forest inventory data.

There is probably not enough time in a vocational agriculture forestry program for a student to learn all of the skills which will be utilized in future employment, education or personal use. However, I would suggest that each instructor canvass the organizations that will employ the graduates of the program and get advice as to the specific skills they require for an entry level position. Focus on these skills and let the future employer worry about the other skills. It has been my experience that many organizations are prepared to train individuals who enter employment with little or no previous experience in certain skill areas.

#### Reference

[1]In developing the discussion of some of the concepts, I relied heavily upon an excellent publication entitled, A CONCEPTUAL FRAMEWORK FOR FORESTRY EDUCATION published by the School of Forestry at Oregon State University at Corvallis, Oregon 97331.

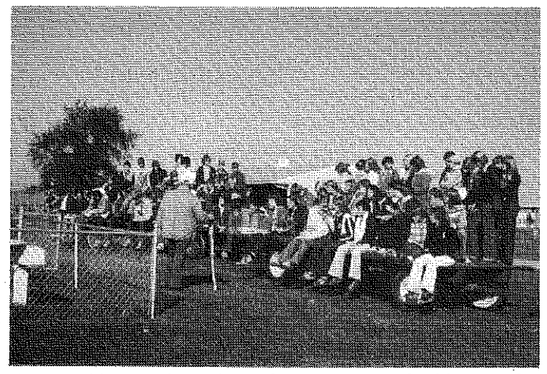
THEME

# Prairie Heights School Farm: SOEP in Conservation

BY NED STUMP

*(Editor's Note: Mr. Stump is the Vocational Agriculture Instructor at Prairie Heights School in LaGrange, Indiana 46761.)*

"There's that pesky office phone ringing again — shall I answer it? Yes!" As community agriculture leaders, we should be proud of the opportunity that working with others brings in accomplishing our goal of "Living to Serve". 'Tis Andy calling from neighboring Pokagon State Park. Just three years ago at graduation time Andy had answered (on the same phone) a call from Park Naturalist Fred Wooley who was in search of a part-time summer assistant. Andy's skills in leading school farm tour visits, preparing taxidermic specimens, and utilizing carpentry skills, along with a communicative, resourceful knowledge and interest in the out-of-doors, had made him a logical choice for that job. Andy proved himself so valuable in construction on the new Nature Center, leading public camper nature hikes, preserving and mounting wildlife specimens and building displays for the center that his part-time summer job never stopped. In fact, Andy's call to me was a search for a graduating, non college-bound student that he might train for a new park position.



**Frequent visitors of all ages share information at our school farm weather station. Members complete and report daily observations.**

### Other Examples

Additionally, my thoughts reflect on Ed who graduated from our program some years ago starting as an assistant with the LaGrange County Soil Conservation Service. A recent conversation with Ed's sister at an overnight fifth grade campout brought me up-to-date on Ed. He accepted a job in Colorado working with irrigation water rights for farmers at the base of the Rockies, and is now in the Black

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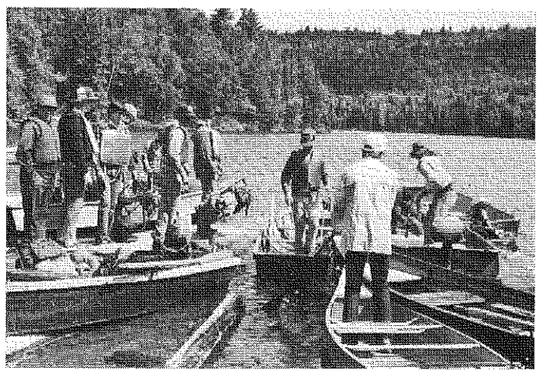
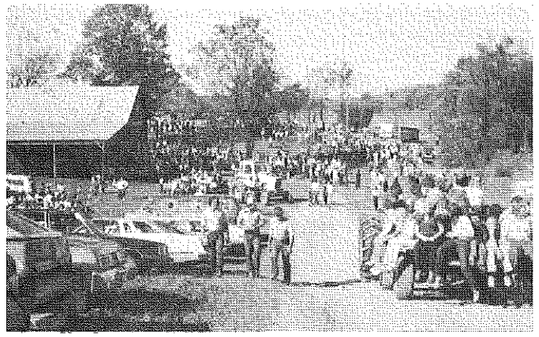
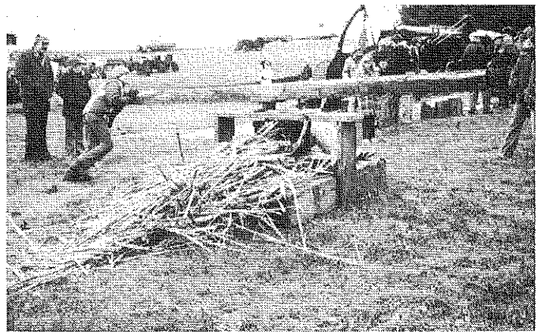


**Backpacking, portaging; being self-sufficient in the Canadian wilderness gives one a special feeling and appreciation for nature and others.**



Our "Heritage Festival" sponsored by the FFA-Vo Ag Program involves many others for a full afternoon of caring, sharing and learning.



Festival time at Prairie Heights is a time for sharing old and new ideas such as members demonstrating sorghum pressing the "hard" way.

## Prairie Heights School Farm: SOEP in Conservation

*(Continued from Page 13)*

Hills area of South Dakota assisting the Bureau of Land Management with controlled timber cuts on public lands.

As I reminisce, Gary, a Prairie Heights vocational agriculture graduate, now in Louisiana, comes to memory. Gary returned to Louisiana after a service obligation, to marry a sweetheart who works in a southern pine lumber mill office complex. Gary's job has him in charge of a 36 member crew responsible for fire control on approximately one million acres of southern pine forest.

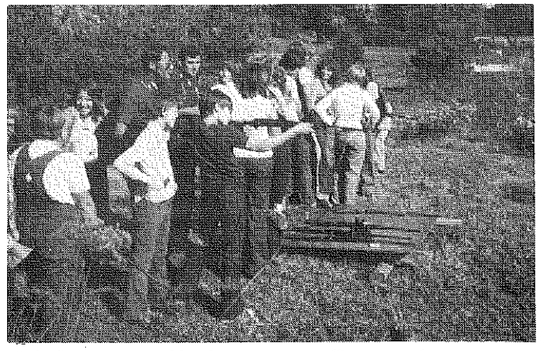
More locally, and daily, many additional graduates are utilizing both old and new conservation practices with their home farms in search of more efficient ways of utilizing our earth's resources for our benefit. Helping these students, and others like Andy, Ed, and Gary who have found full-time employment in conservation careers is an opportunity teachers must not miss. In fact, vocational legislation over twenty years ago strongly encouraged existing programs to expand curricula for training in conservation and many other related non-production agriculture disciplines.

### Linking SOEP

Our Prairie Heights program has had some extra pluses in helping provide students with a practical, sound knowledge of basic concepts and techniques used in conservation. A sandy, rolling, partially wooded 230 acre school farm; combined with specific semester instructional courses centering on wildlife conservation, forestry, soil and water activities, and resource management; are providing a practical "theory-skills" link in training students. Learning through carefully supervised experiences centering on our school farm laboratory is providing an effective and meaningful way of developing essential occupational competencies. Class, group, and individual experiences are offered to enrich, and in many cases provide the main base, for individually designed supervised occupational experience in conservation.

Over the years, the Prairie Heights program has had the opportunity to provide both short term and long term experiences which aid students in perfecting their competencies. The following examples provide an overview of the experiences gained on the school farm.

• Management of an 80-acre hardwood forest stand. This results in a timber sale of just under 100,000 board feet of oak, cherry, ash, and walnut, netting just over $20,000. A five year Long Term Agreement (L.T.A.) is maintained with local ASCS officials for timber stand improvement practices, pond building and reforestation



With the assistance of local conservation officers, members operate an annual Hunter Education course for all junior high age students including familiarization firing at the school farm range.

Members daily feed and manage species of the wildlife study providing opportunity for others to share in special experiences.



We hope to show others species on our tours. Here is one of our members telling a tour group about raccoons.

Leading tours; enriching trail stops provide excellent opportunities for class members to improve skills and gain confidence.

plantings. The forest is offering a continuous supply of firewood from tops and cull trees for share-cutting by students and community members as well.

• A community tree planting program. Some 15,000 to 37,000 conifer and hardwood seedlings are planted annually utilizing the FFA Chapter tree cooperative and tractor mounted planter.

• Black walnut seed collection. During the past three autumns, seeds have been collected for the state nursery and the American Walnut Association. This effort has netted just under 2,000 bushels of green seed at $2.25 per bushel. Members are returned $1.75 per bushel for their efforts.

• Wildlife study area. This project includes the management and daily maintenance, including feed from the school farm, for a wildlife study area which supports buffalo, white tail deer, wild Grand Canyon burros, Canada geese, and more.

• Taxidermy. Each fall wildlife class members utilize community road kills, especially red and fox squirrels, to practice taxidermy. These projects result in FFA and personal exhibit specimen. One class member has her own business specializing in fish mounts.

• Tours and natural interpretation. Students participate in leading and interpreting nature tours for visitors. Annually 1500-1800 elementary and high school students visit during spring and fall. Vocational agriculture students guide them over the farm woods two mile, figure eight, twenty-eight stop Nature Trail. Students maintain and enrich trail stops each spring and fall in preparing to share the area with visitors.

• Trapping. Members cooperatively trap fur bearers (including a protected badger which was released unharmed) on the school farm each fall season.

• Syrup production. Tapping and boiling down maple sap from the school farm forest highlights tree growth studies each spring by forestry class students.

• Cropping. Students are involved in yearly cropping of the school farm's 60 tillable acres, utilizing approved practices designated in the long-range and up-dated soil conservation plan. Practices used include sod buffers on steep slopes, contour strip cropping, no-till row cropping, legume-grass meadow mixtures, irrigation, and fertility and management practices to enhance top land care and utilization.

• Weather data collection. Daily, since May of 1968, students have maintained and reported weather observations from the FFA Chapter's U.S. Weather Bureau Station.

• Cooperative research. Working with Purdue University's Agronomy and Entomology Departments, plant growth projects and biological insect pest control studies have been conducted. Also, through cooperation with a private research laboratory in Washington, an acid rain study has been launched.

• Local wildlife conservation. Annually, students assist local conservation officials in promoting wildlife habitat through distribution and planting of wildlife food plot seed, by building nesting structures for water fowl and squirrels, and in releasing quail, pheasants, and mallard ducks.

• Hay ride tours. The vocational agriculture program hosts a continuous flow (even in winter) of hay ride educational tours at the school farm. Visitors are of all ages. Students are always demonstrating and emphasizing conservation.

• Outdoor safety programs. Students prepare and conduct outdoor safety programs with the assistance of the area conservation officer. Topics and audiences include:

Lawnmower Safety, all 5th grade students
Snowmobile Safety, all 6th grade students
Hunter Education, all 7th grade students
Boat and Water Safety, all 8th grade students

• Irrigation. Students have designed, maintained and utilized an irrigation system capable of covering 40 acres with 1" on a 10 day cycle.

• Camp Counseling. Students have assisted with overnight campouts of many school youth groups on the school farm with night hikes, camp fire vespers and hay rides.

• Fitness course. A physical fitness trail has been planned, built, and is currently maintained on the school farm. The 1.8 mile, in-station, self-guided trail is open to the public.

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## Prairie Heights School Farm: SOEP in Conservation

*(Continued from Page 15)*

• Public displays. Students have been responsible for the establishment, organization, and maintenance of a full scale Community Agriculture Museum.

• Community center construction. The Prairie Heights program has provided for the design, construction (from timber stand sale), maintenance, and utilization of a rustic, rugged community center (150 capacity) near the Museum for use by students and community alike.

• Public recreational activities. Each October, students promote, organize, and conduct an open house, "Heritage Festival", which has grown to nearly 3,000 Sunday afternoon visitors enjoying wagon rides, trail tours, and sharing skills of weaving, muzzle loading, candle dipping, apple butter making, apple fritters preparation, steam thresher operation, horses working, and a host of other activities.

• Molasses. Each year students raise, harvest, and sell molasses produced from the school farm's sorghum patch.

• Student recognition and recreation. Top chapter achievers complete an annual eight day Canadian wilderness trip emphasizing wilderness living, recreation, fishing, and campfire lore and vespers.

Our list of activities seems endless in providing students meaningful conservation experiences. In the near future, members have set a work day to help reconstruction and relocation of a 100 year old handhewn log cabin. It will take its place along the back nature trail, as part of our continuing pioneer-living history lesson for ourselves and visitors alike.

Gaining these and similar practical experiences provides the background for students like Andy, Ed, Gary and others to work with people and use their heads and hands in successfully attaining and contributing toward a satisfying and productive career in conservation.

THEME

# Forestry SOEP: Headache or Heartbeat

By Dennis Wallace

*(Editor's Note: Mr. Wallace is the Vocational Agriculture Instructor at Yelm High School, Yelm, Washington 98597.)*

As instructors of vocational agriculture, we recognize that learning through supervised occupational experiences is a very effective and meaningful way of developing essential occupational competencies. We also realize that every program should involve each student in a supervised occupational experience program that is competency based and designed to develop those essential skills needed by students to achieve their occupational goals.

Educational training reminds us that these SOEP programs need to be carefully planned, developed, supervised and evaluated, while practical application shows that occupational experience in the real world helps make in-class instruction come alive. With all these positive aspects of a SOE program, who would think that providing a quality SOEP for every student in each program area could be so difficult.

### The Problems

The difficulty stems from (1) not all my students are interested in the subject area in which they are involved; (2) I do not have the time to follow through on every project to make sure they are meeting the desired outcome; (3) I do not know how to develop an SOEP that is meaningful for every student; (4) my students do not have the funds necessary to develop a good project; (5) if they are not an FFA member, I do not need to stress the element of SOE to them; (6) all of the above; or, (7) none of the above. Pick one or more from the list or select your own personal reason. SOE programs can be a number one headache to all of us involved in developing, maintaining and evaluating individual projects. However, this is one headache that can be the heartbeat of your program, increase participation in the FFA and be a gratuitous slap on the back for both yourself and the student involved in the project.

My personal difficulties were that I was new to the area and, while having a forestry background, I had never before taught forestry. The forestry program was in its first year of operation and I had students from the ninth to the 12th grades who were taking the class as an elective. What do you do from here? Aside from developing curriculum content, I identified student projects as a high priority to help build the program.

### Toward Solutions

The first step in developing student projects is to find out where they are now, so a survey was conducted. My survey consisted of their name, age, address, how to get to their residence, interests, facilities available, future plans, existing projects, operating capital, and possible forestry projects.

From there, it was one-on-one, with discussion centered around what they have, what they want, what their interests in forestry are, and how can those interests help them attain their future goals. I attempted to help each student design a project that would be of benefit personally by providing experience and an income while, at the same time, being related to the forestry industry. From the survey, I found that some students already had good projects under way in forestry; others had projects in other agricultural areas; some had no projects, but were trying to design one; and a few could not afford a project due to the lack of funds, space or job opportunity.

To understand the evolution of the development of SOE programs, you must first start with the existing projects in the program area. These projects are often the necessary springboard that will get the other students interested and willing to try a forestry project of their own.

Of the thirty-nine students enrolled in the Yelm High School Forestry class, six had existing forestry related projects. During class discussions on SOEP, each of those six students had an opportunity to explain their project, how it got started, what their responsibilities and duties were, and what they received in return for their efforts.

This discussion proved valuable in that nine students who had no existing project, began looking for ideas for an individual SOEP. Five of the students started firewood sale operations, while the other four become involved in working for local individuals who were selling firewood or other forest products. The placement type SOE programs were harder to find but had less expense for the students involved. The individual entrepreneurship projects were easy to initiate, providing the students had enough operating capital or access to equipment through agreements with parents or relatives.

Eighteen students had existing non-forestry agricultural projects that were in line with their occupational goals and interests and concentrated their efforts on building their concerns into quality type projects while maintaining their forestry interest through chapter sponsored group projects. The remaining six students had no projects and little opportunity to build a project that would benefit their interests in forestry. The six students did benefit from the chapter's group projects where they could learn valuable job skills, recordkeeping and be involved in a hands-on experience without incurring the expense of capital or space.

As with any on-going project, the instructor's main concern should be that it is indeed a learning experience that is helping the students gain work experience that will directly benefit them as either a productive occupation or as a step to advanced training in an occupation of their choice.

### Recordkeeping

Recordkeeping, as with all projects, should be stressed as a management tool for the project's overall decision making process. This sounds easy enough until you see the vast number of record books available and management systems that are in use within the individual enterprise areas.

To simplify matters, I have all our students use the Washington Record Book for Supervised Occupational Experience in Vocational Agriculture. This provides all the information that is necessary for any project as well as maintaining records regarding students activities, future goals, and the training agreement. It also allows the instructor to maintain a like-file on every student no matter what their project is. Utilizing one type of record book facilitates the ease of teaching one system of recordkeeping and compiling data for SOEP reports.

With planning and recordkeeping out of the way, the remaining factors to consider are supervision and evaluation. These two are commonly grouped together in the form of a home visit. This can be the most rewarding aspect of teaching agriculture. Also, it is an avenue for building local support for the total vocational agriculture program. Through active, well planned SOE programs, the teacher can develop a working relationship with both parents and students that many other teachers miss out on, while allowing the teacher an opportunity to keep a pulse on what is going on, or should be going on, in the total vocational agriculture program.

### Group Projects

This past year, Yelm FFA in conjunction with the forestry class, set up its own woodlot operation so forestry students could have a project. It was open to all forestry students but especially lent itself to meeting the needs of those students without projects. We made contacts with timber companies and found that we could attain non-usable logs and have them delivered to the school for a moderate cost. Using the instructional program's tools and equipment, we cut and split the wood and prepared the end product, firewood, for selling. We also got involved with advertising, estimating cord volume, keeping a log of hours worked and skills accomplished as well as other recordkeeping activities. Species identification and characteristics were also a component of the total project.

Although the students did not earn any money from their efforts, they gained valuable work experience and could see the results of their individual contribution, and how it could be translated into monetary units per hour worked. We also started a table top Christmas tree operation that involved securing seedlings, containers, and soil for subsequent planting and maintenance of the seedlings. This project will evolve to include transplanting, shearing, advertising, and marketing of the product.

Another aspect of the group project was making student labor available to the community for forestry related activities. In the process, ten students were involved in reforestation and pulling trees at a nearby nursery. Throughout the group projects, recordkeeping and personal accountability were stressed with progress measured in cash earnings, non-cash earnings and increase in inventory of products on hand.

A most important aspect of developing SOE programs is for some students to see what other students have accomplished in different areas and how it can help them attain their desired occupational goals. Next year, I will be able to use data collected from this year's activities as possible avenues for incoming students.

Money usually talks louder than experience, and SOE programs will speak out as a positive influence on the total program. It should be noted that not every student is guaranteed to make money, but that the opportunity is there if one is willing to put forth the necessary effort to make a project a profitable, learning experience.

SOEP provides valuable learning opportunities for our students, but it is our responsibility as instructors to provide motivation and guidance in helping them develop their project. On-site supervision and instruction is essential as is developing short and long term goals. With our help students can gain valuable experience and break down some of the barriers to employment that exist to today's youth. While every student is not a winner in everything they do, SOE programs can supply the rewards and recognition necessary to help them. In this vein, SOE programs are the heartbeat of our program and should be handled with care.

THEME

# The Importance of SOEPs in Forestry

By Randall Tanner

*(Editor's Note: Mr. Tanner is the Vocational Agriculture Instructor at Swainsboro High School, Swainsboro, Georgia 30401.)*

Supervised Occupational Experience Programs (SOEPs) are a vital link between the classroom and future jobs for students of vocational agriculture. This is true for all curriculum areas of agriculture and especially so for instruction in forestry. SOEPs in forestry should help develop the competencies needed for job entry in one of the many forest related occupations. Each SOEP should be set up to meet the needs of the individual student.

Before attempting to set up experience programs in forestry, instructors must examine their beliefs concerning SOEPs. What do I want students to learn from their program? How much time should the student spend on SOEP? Is it necessary for the student to benefit financially from the program? Should course credit be given for SOEP work? What about hazardous jobs in forestry? How will I evaluate the student's performance on-the-job? How much time will I have to supervise the programs? Once these questions have been answered, most forestry instructors will see the need for several different types of SOEPs in forestry. The three main types are SOEPs on-the-farm, on-the-job, and in a school forest laboratory.

## Home SOEPs

Supervised home projects are still very important in providing certain students with job skills associated with the production aspects of forestry. The instructor can assist each student who has forest land in developing a management plan. As many management practices as possible should be included in the plan and the instructor should supervise closely to make certain the practices are carried out properly. SOEPs on the home farm are especially advantageous because they most often get the parents directly involved with the student's work.

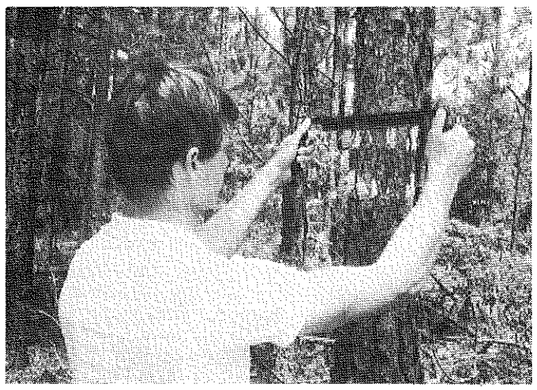
## Job Placement

Some forestry students who do not have home projects in forestry may receive valuable occupational experience while in a cooperative work program within the forest industry such as working with a harvester, private consultant, etc. In job placement programs it becomes very important for the instructor to analyze the type of work the student will be doing. Is it hazardous? Is it educational? Does it interfere with other school work? Is the student practicing proper techniques as taught in the classroom? Is the student treated as a trainee or just another employee? If a student's work is primarily sweeping day after day, he/she might not develop all the job entry skills needed for full-time employment in a forestry job.

A student in a job placement SOEP would be better served by a job that provides many different types of work during the training period. The forestry instructor must discuss the purposes of the work experience program with the employer and the student and arrive at a training agreement suitable to all parties. It is also important that the employer have a part in the evaluation procedure used for the program.

## The School Forestry Laboratory

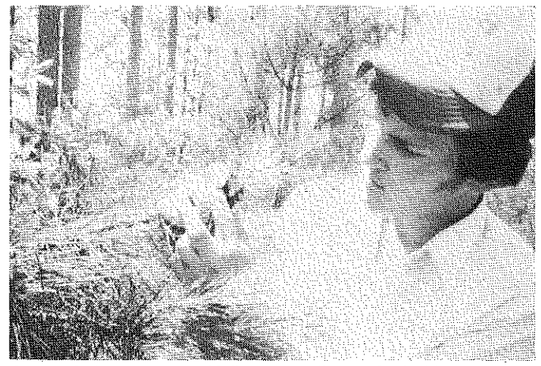
A third type of forest related SOEP can be carried out effectively on a school forest laboratory. In many cases this program may be the only opportunity for students to receive the experiences which develop confidence in their ability to do quality work.



**Students prepare to paint and mark individual boundaries on plots.**



**Growth rate and age are checked by a student.**



**Tip moth damage on a Loblolly pine seedling is checked by a student.**

School forest laboratories may be provided by forest industries or be on lands owned by cities, boards of education, schools, etc. Since transportation to and from the school forest can be a problem, location is more important than size; however, the laboratory should be large enough to provide each student with an area on which to work.

Much of the work experience can be obtained during exercises on the school forest involving the entire class, each working on an individual plot. The instructor can rotate from plot to plot supervising work which is being done. Work days may be set up after school or on Saturdays during which several students could work on their forest plots. The school forest allows the instructor to do a better job of supervision in less time while conserving on travel time and expense. At the same time, students receive the hands on experiences necessary for job entry skills.

## The Swainsboro Forestry Program

At Swainsboro High School, we have a traditional vocational agriculture program including livestock production, ornamental horticulture, forestry, welding, electrification, power mechanics, woodworking, leadership, sales and service, etc. About half our students are from farm backgrounds and half are not. We are in an agricultural county with about three-fourths of the land in forests. The forestry industry ranks second to the textile industry in contributions to the local economy.

**Land measurement is mastered by a student.**

All agriculture students are encouraged to have a supervised occupational experience program. This is relatively easy for those students with land and facilities available but is sometimes a problem for other students. For some students it becomes necessary to substitute with SOEPs on school-provided facilities. We are fortunate to have an FFA school forest near the campus on which students receive supervised experience for most of the jobs taught in the forestry curriculum. We also have students with SOEPs on home forest lands where they put into practice what is taught in the classroom. In addition, a few students are placed on-the-job for supervised experiences in forestry.

Our forestry program is an important part of the total school program. We offer one full year (two semesters) of forestry. We have seen a need for another year of forestry, but due to the wide variety of offerings in our agriculture department, one hour per day is as much school time as we can provide.

Through our FFA chapter students are able to participate in various individual, team, and class contests and awards programs in forestry. Among these are the home forest contest, the forestry field day contest, and the school forest contest.

The home forest contest is sponsored by Georgia Pacific Corporation and the FFA. This contest offers students cash and equipment for outstanding work on home SOEPs in

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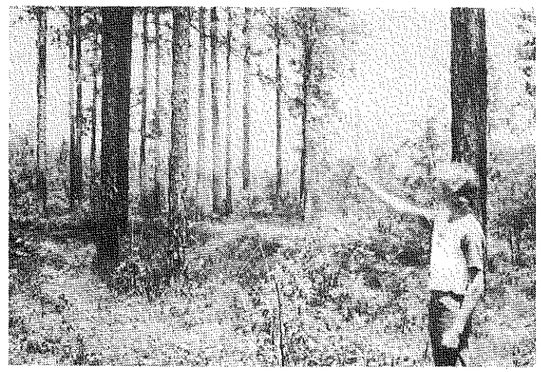

**Timber cruising is among the skills developed.**

## The Importance of SOEPs in Forestry

*(Continued from Page 19)*

forestry. Students with home projects involving forestry are encouraged to compete in the contest and the competition motivates them to do a better job with their SOEP. Management plans are set up for each home forest and record books are graded each grading period.

There are ten events in our forestry field day contest. These include tree planting, compass reading, selective marking, forest management, tree identification, sawtimber estimation in standing trees, pulpwood estimation in standing trees, ocular estimation of tree heights and diameters, identification of insects and diseases, and land measuring. All these events test the students' skill at jobs that are directly related to work experience in forestry. The events in the contest are updated annually to keep up with changes in the industry.

The school forest contest is sponsored by Union Camp Corporation and offers cash prizes for class winners and forestry instructors of winning classes. This contest is a real motivational tool for classwork and laboratory work since every part of the instructional program in forestry is evaluated by a panel of judges. Judging includes the management plans, methods of boundary identification, fire protection, maintenance of signs, planting plots, harvesting plots, hardwood control plots, prescribed burning plots, course of study, resource center, tree identification notebooks, records on individuals plots, and publicity. In addition, a written test is administered to the class by the contest sponsor and the class average is a part of the judging score. The class must work as a team with every member participating; often, peer pressure causes each student to excel. If a particular student is doing poorly on any phase of the program, other students provide assistance toward improvement. The result is that each student spends more time on leaf collections, notebooks, record books, individual plot work, and studying for exams to keep from disappointing other class members.

### The Forestry Curriculum

At Swainsboro High School, we begin our year of forestry with a discussion of the importance of forestry, then contests and awards programs available to students. We then set up SOEPs for all students and review record-keeping skills. Next comes tree identification and leaf collections. It is important to teach certain jobs at specific times of the year. It is difficult to make a leaf collection after deciduous trees shed their leaves in fall.

After our tree identification contest, students get experience on several jobs at the school forest, which is owned by the city and leased to our FFA Chapter at no cost. Our school forest consists of approzimately 14 acres with many different ages and several different species of pines. It is divided into 25 individual plots. Thus, students get occupational experience in marking boundaries, land measuring, harvesting, planting, undesirable species control, prescribed burning, insect and disease control, cruising forest products, and determining growth rate and age of trees. Each student is also responsible for keeping records of work done and the effectiveness of the work.

Each job is discussed in class. Students are tested on knowledge, and then students are supervised as they carry out the procedures on the individual plots. Students with home forests are encouraged to carry out most of the management practices taught in class and are provided assistance and supervision to insure that the practices are used correctly. Students with experience programs involving job placement also apply many of the practices discussed in class to real situations on-the-job.

Supervised occupational experience programs should be as much a part of the forestry program as they are part of all vocational agriculture programs. It is through these experience programs and contests that students really learn by doing. Because they apply what is learned in the classroom under actual forest conditions, the material being taught takes on real meaning for each student.

## BOOK REVIEW

USE OF COMPUTERS FOR NATIONAL DEVELOPMENT, by G.P. Tottle, Editor, London, England: Heyden & Sons, Ltd., 1982, 42 pp., $16.95.

The USE OF COMPUTERS FOR NATIONAL DEVELOPMENT booklet is an annotated bibliography. The annotated bibliography provides an overview of a wide-range of abstracts concerning computing techniques in agriculture.

The booklet is divided into ten categories: Computer Applications - Specific and Policy Papers; Computer Applications - Various; General Systems Approaches to Agricultural Developments; Linear and other Programming Operations Research and/or Techniques; Macroeconomics; Records and Information Handling Systems; Rural Planning and Sector Analysis; Simulation and Modeling; Instrumentation; and Forcasting.

Each category contains a listing of papers presented at a variety of agricultural-related conferences or abstracts of papers published in journals. The author, title of the paper or article, where the paper was presented or published, date, and number of pages are provided. Following the title information, a 50 to 150 word abstract is included about the paper.

One hundred and nine abstracts are included within the ten broad categories. The abstracts are the result of applications in agriculture rather than the technology of computing. Many of the abstracts are products of application research completed in or for developing countries.

The booklet, USE OF COMPUTERS FOR NATIONAL DEVELOPMENT, is most appropriate for college students and college teachers interested in an annotated bibliography of practical applications of computing techniques in agriculture for developing countries.

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THEME

# Forestry: Inexpensive and Popular

BY ERIC HENDERSON
*(Editor's Note: Mr. Henderson is a Vocational Agriculture Instructor, and State FFA Advisor, at Palmer High School, Palmer, Alaska 99645.)*

Like many vocational agriculture programs throughout the country the Palmer High School agriculture program in Palmer, Alaska, was started through the promotion of a citizens' group. The result was the hiring of a vocational agriculture instructor on an experimental basis to see if there was enough interest. I was hired as a part-time science, part-time agriculture instructor six years ago to start an agriculture program. The success of my program depended on two factors: the number of students my program attracted, and the cost of the program. Like any vocational program, vocational agriculture can be quite substantial in start-up costs; however, depending on local resources and the creativity of the agriculture instructor, some classes can be taught at a very reasonable cost. One such class is forestry.

Whether in a rural or urban area, the natural resource course always seems to attract many students. Palmer High School was no exception. In 1978, when I started the vocational agriculture program, the class was called "Natural Resource Management". The class title was later changed to "Basic Forestry" which has generated the greatest interest and in which I can specialize in a more specific area of resource management.

### Course Outline

Basic forestry can be taught on a yearly or on a semester basis. How deeply you wish to cover the material on forestry will determine the course length. The time in which parts of the course are to be taught should be determined by local conditions such as weather and your school schedule. For instance, it is somewhat difficult to teach chain saw operation in December in Alaska because it is hard to get students to cut wood outside at -20°.

Basic forestry is broken down into several sections that will satisfy the course objectives. These sections are outlined as follows:

**Dendrology and Plant Physiology**: This section is best taught during fall or spring when plants have leaves and are not in a dormant stage. Students are instructed in basic botany. They are required to know the principles of plant growth and classification. As a project, each student has to collect and mount a specified number of woody plants that are found in our state forests. Students are required to learn both common and scientific names of the collected species and must be able to describe their growth habits.

**Silviculture**: Students learn about the major silvicultural systems in the United States and study local systems. Since silviculture is the study of forest management and its relationship to environmental and economical factors, students have an array of projects that they can do to enhance their understanding of silviculture. One project is to determine the harvest system of a local forest after a study of climax species. With the use of an increment bore, students determine the age of the forest and the amount of disease and insect damage.

Another project is to study a watershed of an area with the use of topographic maps and aerial photographs. Once the watershed is determined, students develop a conservation plan for the area.

**Forest Measurement**: It is important that students learn how to use instruments that measure the forest. Equipment used includes: cruising sticks, clinometer, chain, diameter tape, Abney level, and compass Cruz-All. I have found

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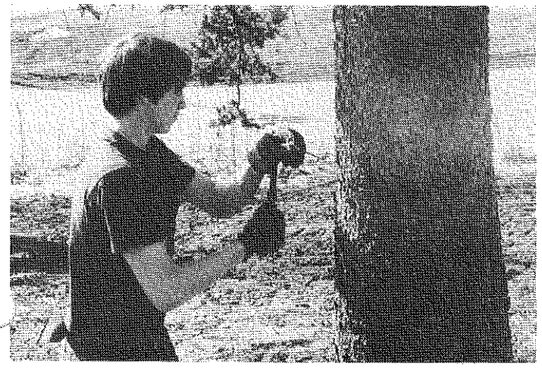
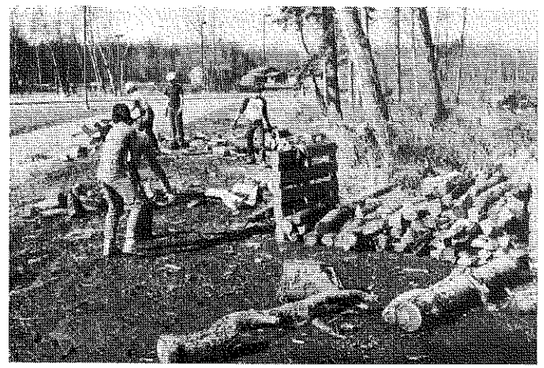
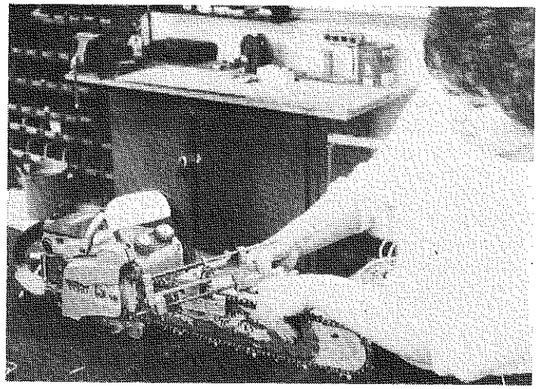


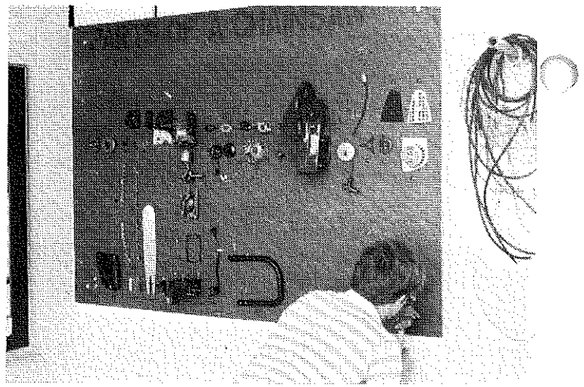
**The increment bore is a standard tool used to determine the age of a tree. The bore can be broken easily if not properly used.**



**Forestry class uses skills that can earn money for the FFA chapter like selling fire wood.**



Proper maintenance of a saw not only teaches valuable skills but also maintains the long life of the equipment.



An excellent project and demonstration is to break down an old saw and display it in order to learn parts.

## Forestry: Inexpensive and Popular

*(Continued from Page 21)*

that these tools are relatively inexpensive to buy and, if students work in groups of three or four, total costs can be kept down. Students are given basic instructions on how to use the instruments and then groups are assigned an area of about one-half to one acre of forested land to do an estimate of standing timber. This exercise also will combine knowledge and skill learned in dendrology and silviculture sections of the class.

**Forest Harvest:** Many of my students enroll in the class in order to take part in this section. The main emphasis is chain saw operation which can be very dangerous to teach if safety precautions are not enforced. My experience has been that students who have had past experience with the saw can be the most careless. Thus, I start every student with basic instructions in chain saw safety. This is done through lecture and the use of a circular developed by Pennsylvania State University, Cooperative Extension, called Power Chain Saws, Their Care And Use. Students are required to fill out a worksheet for use with the circular, and to pass a written safety operation test. I also use films on chain saw safety and guest lecturers on saw operation and safety. After about three weeks of in-class instruction, students start working with the saws. We first go through operations, maintenance, trouble-shooting and sharpening.

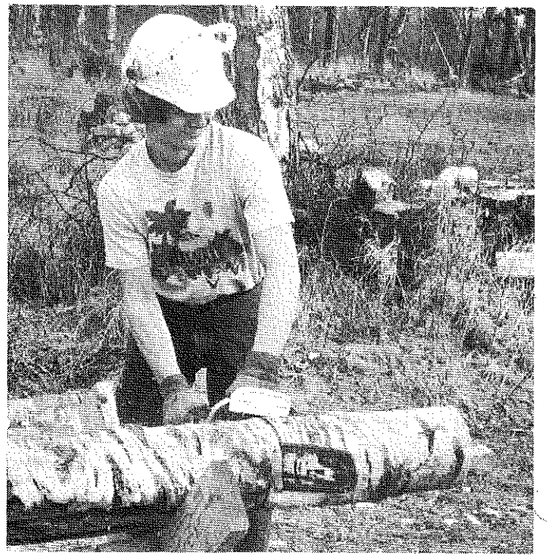
Students are then divided into groups of three or four per saw and we start actual operations. I demonstrate proper technique in felling and bucking and then give each group a certain area in which to cut marked trees and fallen timber. I try to allow three to four hours per student on a saw. It is important that students wear proper safety gear when operating a saw. This includes hard hat, eye protection, ear protection, chaps, boots and gloves. It is also important that the instructor constantly supervise the activity.

The forest harvest section can also utilize the knowledge that students gain in previous sections of the class such as the forest measurement section. An example activity is to measure the standing board feet of a tree, convert it to board, then cut the tree down and into four foot bolts and determine how accurate their measurements are.

### Summary

In general, the course is designed to give students a basic understanding of forestry. I have found that many students who thought they would like to pursue a career as a professional forester are somewhat discouraged by the amount of math and science involved and thus re-evaluate their career objectives.

On the other hand, the skills, such as chain saw safety, are those that students will use in the future and often will enable the student to supply home needs for fire wood. In some cases the students will be able to develop more advanced supervised occupational experience projects from what they have learned.



Proper safety gear and safe operation practices will reduce potential for accidents.



## BOOK REVIEW

Agricultural Computer Programming: A Practical Guide, by Richard A. Levins and W. Charles Walden, Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1984, 147 pp., $10.95.

Agricultural Computer Programming: A Practical Guide was written to be used by farmers, ranchers, county agents, 4-H members, and vocational agriculture teachers and students. It is written in easy to understand language and the authors use analogies throughout the book to make the material more meaningful and understandable. The authors' goals in developing this book were to discuss the fundamentals of agricultural computer programming in non-technical terms.

They cover what computer programs are, what they can and cannot do, what to look for in a good program, and why every computer program will not work on every computer. In addition, they wanted to provide the reader with the opportunity to develop a simple but useful computer programs. They accomplished their goals well.

The book is divided into 22 chapters. The first three chapters deal with an introduction to computer technology, the basics of what constitutes a computer program, and an introduction to computer hardware. The next 14 chapters deal with the development of computer programs that have various applications in agriculture such as a break-even price program, a machine capacity program, a loan payment program, a crop comparison program, a ration formulation program, and a loan amortization program. Each chapter is written in simple, easy to understand terms and the authors do an excellent job in describing the processes involved.

They write the program in "English" and then translate the program into "computerese." This approach is very helpful to those who are novices in the computer area. However, the book has much application for those who have much more skill in computer applications in agriculture. The final 5 chapters in the book discuss using printers, making programs easy to read, program conversion techniques, buyer computer programs, and learning more programming.

Agricultural Computer Programming: A Practical Guide is an excellent reference book for students and teachers in agricultural education. In addition, for teachers who want to teach units on agricultural computer programming, this book would be an excellent text book for students of vocational agriculture.

Both Dr. Levins and Dr. Walden are extension farm management specialists and agricultural economists and have been heavily involved in instructing farmers, ranchers, county agents, vocational agriculture teachers, and others regarding computers and computer applications in agriculture. Thus, their background and practical experience have prepared them well to write a book of this nature. I highly recommend this book as a reference and a text.

Jimmy G. Cheek
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## BOOK REVIEW

Teacher Education in Agriculture, edited by Arthur L. Berkey, Danville, Ill., The Interstate Printers and Publishers, 1982, $14.75.

Teacher Education in Agriculture was written by some twenty-nine leaders in the profession. This second edition offers great thought and insight into the profession in the 1980's. This publication focuses upon the current issues facing and the status of teacher education in agriculture.

Chapters one, two, and three deal with the development of, the need for, and programs of teacher education in agriculture, respectively. Chapters four and five discuss instructional objectives for preparing teachers and recruiting and selecting teachers.

Chapters six through nine describe aspects of the curriculum. Specifically, they include: general education, agricultural subject matter and occupational experience, professional education and field-centered experiences.

Chapter ten relates to student personnel services in teacher education. Chapter eleven is about inservice education for teachers of agriculture, while chapter twelve discusses graduate study for teachers of agriculture.

Chapters thirteen and fourteen deal with the evaluation of teacher education programs and research in teacher education in agriculture, respectively. Chapter fifteen is about the role of teacher education in international agriculture.

Chapter sixteen focuses on philosophy for teacher education, and the last chapter, seventeen, discusses the current issues and future outlook of the profession.

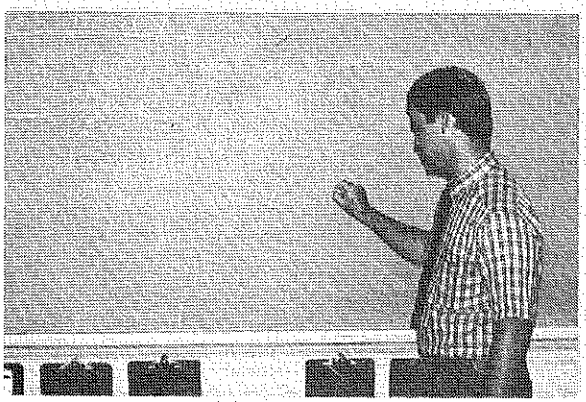
A real strength of this book, as related by the Editor, lies in the diversity of its many authors. Although allowing the reader exposure to varying ideas and positions in the profession, it provides a common emphasis on high quality programs. This book should be considered essential to the library of any teacher educator in agriculture, and may be of great interest to any member of the agricultural education profession.

George Wardlow
The Ohio State University
Columbus, Ohio

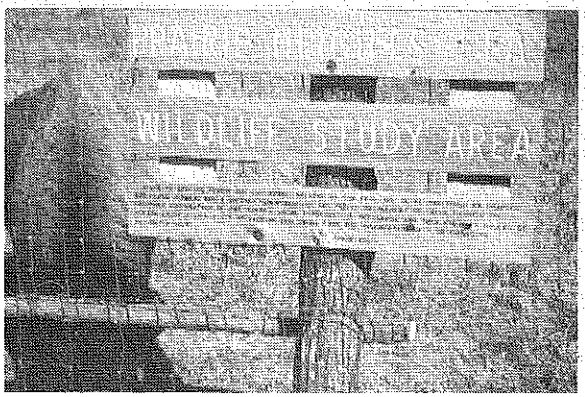
# SOE Programs Utilize

Contests

Home Visits

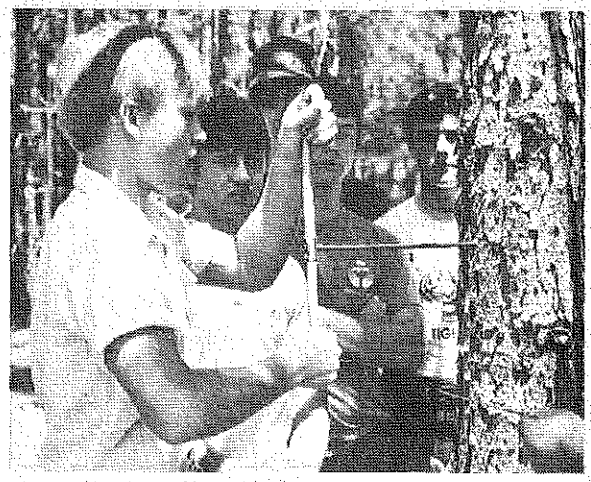


Classroom Instruction



Community Awareness

Land Laboratory Activities



Small Group Instruction

(Photographs courtesy of Frank B. Flanders and Ned Stump.)