ENVIRONMENTAL HEALTH SERVICES

PROGRAMS & ACTIVITIES

Oakland County Health Division

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[1]Some graphs show a decrease in activity for the years 1980-82. This trend reflects the economic problems of the period. People did not have the money to buy a new home, operate a swimming pool, or open a restaurant. In turn, services in such areas as sewage disposal, water resources and food service sanitation stayed constant or declined. As the economy moved upward in 1983 and more investment money became available, demand for these services began to increase.

PROLOGUE

This document describes the varied and complex activities of the Oakland County Health Division's Environmental Health Services. The agency and its representatives are concerned with the effects of the environment upon human health and well-being. The many areas of concern are regulated to various degrees by health-related laws and ordinances. From the public health problems in a food service facility to those posed by a sanitary landfill, Environmental Health Services is constantly working to meet the challenge of an ever changing environment.

The environmentalist plays three roles in the course of his/her activities. One is that of consultant. People may not know how to comply with the law. Through consultation, the environmentalist examines technical problems and offers possible solutions. Another role is that of educator. The public may have questions about the reasons behind rules and regulations. When these rules are properly explained, problems may be solved without the use of legal action. Finally, the environmentalist becomes an enforcement officer. Here the legal system is used to gain compliance. This course is used only as a last resort. In fact, it is not needed very often. Most compliance is accomplished via the processes of consultation and education.

Once a problem has been solved, the environmentalist works to prevent its recurrence. An informed public is an important resource. Environmental Health Services is concerned with the public need for information. An effort is made to distribute information related to environmental problems of the home, work place and community. In this way, problems may be prevented from developing or their effects minimized.

Information about Oakland County Health Division's Environmental Health Services is given on the following pages. It is hoped that this information will be useful to you. If you have questions about the environmentalist's activities, please feel free to call.

FIGURE 1:

OAKLAND COUNTY ENVIRONMENTAL HEALTH SERVICES ORGANIZATION CHART

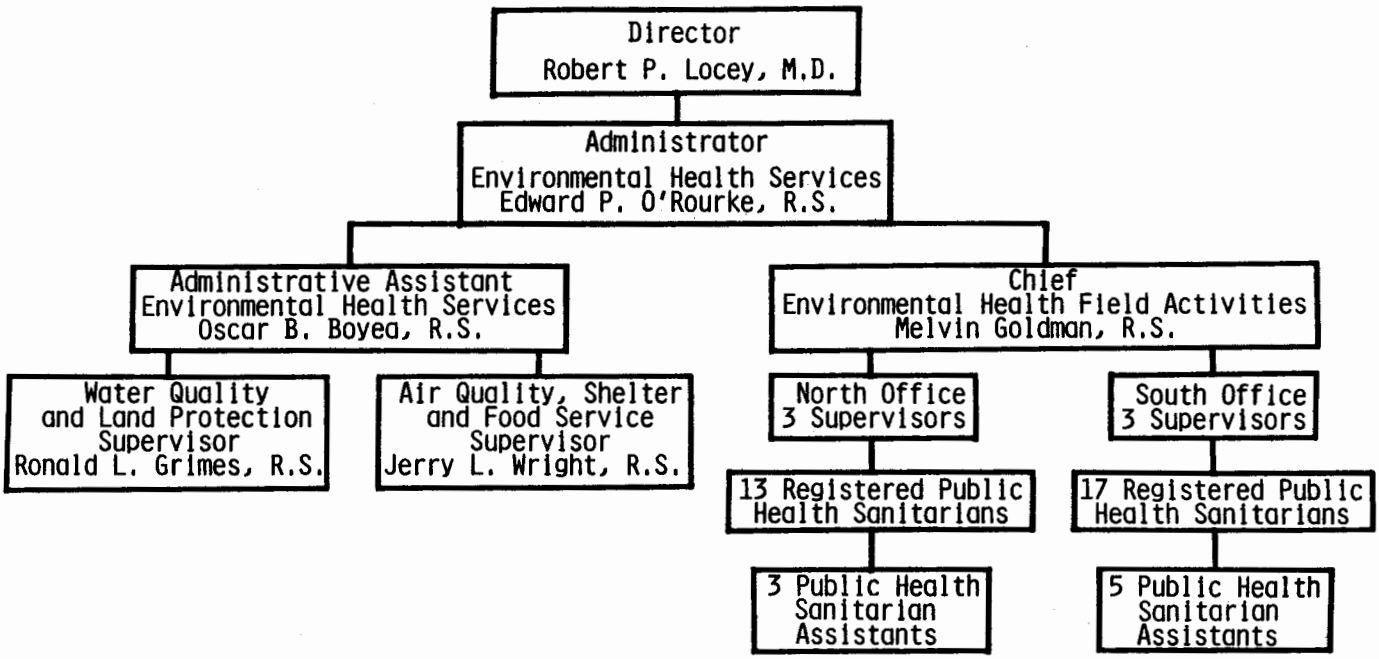


FIGURE 2:

ENVIRONMENTAL HEALTH SERVICES

Air Quality	Food Service Sanitation	Water Resources	Shelter	Land Protection
Outdoor Air	Permanent Food Service Sanitation - Restaurants	Public Water Supplies	Schools	Land Use and Planning
Indoor Air	Temporary Food Service Sanitation	Private Water Supplies	Nursery School/ Day Care Center	Toxic and Hazardous Waste Management
	Mobile Food Service Sanitation	Bathing Beaches	Mobile Home Parks	Refuse (Solid Waste) Management
	Vending Machines	Public Swimming Pools	Foster Care	Sewage Disposal
	Retail Food Stores	Private Swimming Pools	Training Housing-Motels	Campgrounds
			Residential Housing	
			Nonresidential Housing - Workplace	

FIGURE 3: Programs as a percentage of total activities - 1983

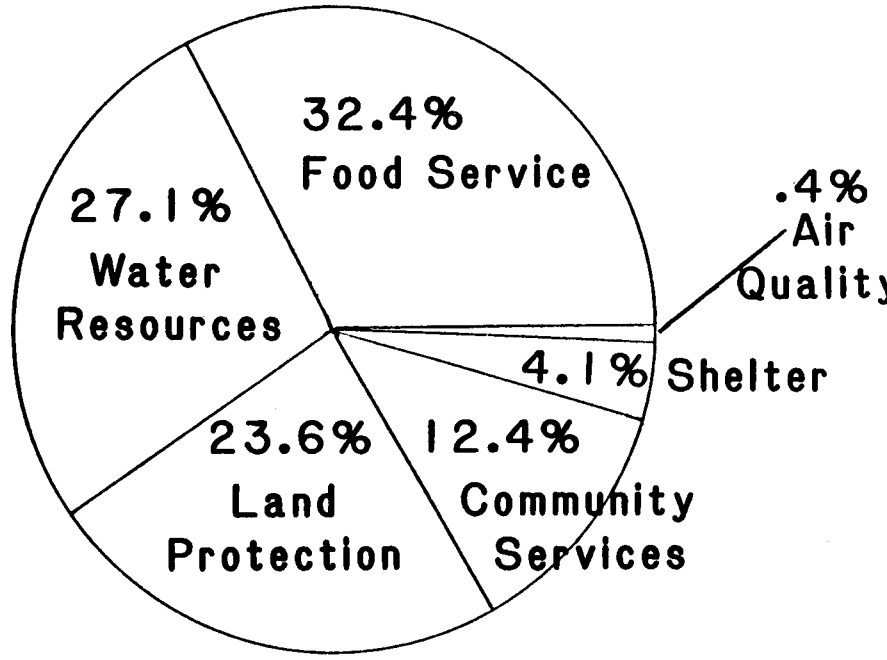
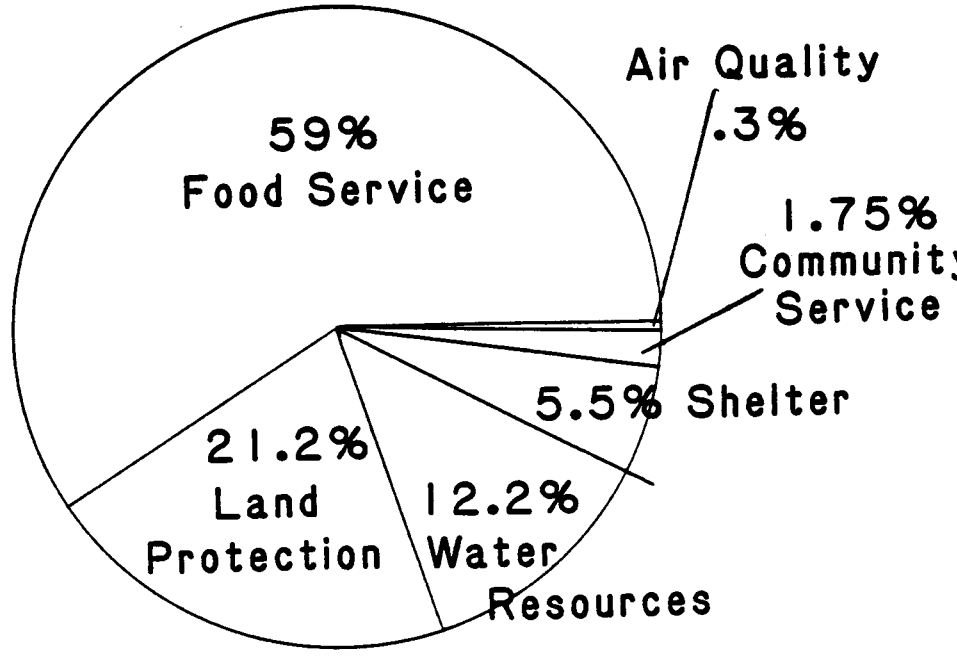


FIGURE 4: Programs as a percentage of field*activities - 1983



*Refers to complete and follow-up inspections

AIR QUALITY

A. OUTDOOR AIR

One objective of the air pollution control program is to pinpoint areas of high pollution and recommend control measures. Environmental Health Services is part of a network which regularly collects data on air quality in southeastern Michigan. The information is given to the Michigan Department of Natural Resources. On the basis of this information, problem areas are noted and control measures instituted.

A large part of any public health program is to inform people of steps they can take to prevent problems from developing. For example, open air burning contributes to the problem of air pollution. Disposal of combustibles in a manner other than burning improves air quality.

B. INDOOR AIR

Indoor air quality is an important environmental concern. Most people spend a majority of their time indoors. The air they breathe should not adversely affect their health. When requested, environmentalists work to solve air quality problems in homes, schools and the workplace. These efforts are co-ordinated with the Michigan Department of Public Health, the Department of Labor, local units of government and other involved parties.

Incinerators are inspected as part of the Air Quality program.

FOOD SERVICE SANITATION

The main purpose of the food program is to assure the public that the food they purchase is safe and sanitary. Toward that end, inspections, consultations and related activities are provided at markets, vending machine locations, mobile food service operations, restaurants and temporary food service sites (e.g., a booth at a fund raiser). Total services numbered 36,557 in 1983, an increase of 7.9% over 1981 figures. (See Figure 5) Services in individual categories such as markets also increased. (See Figure 6)

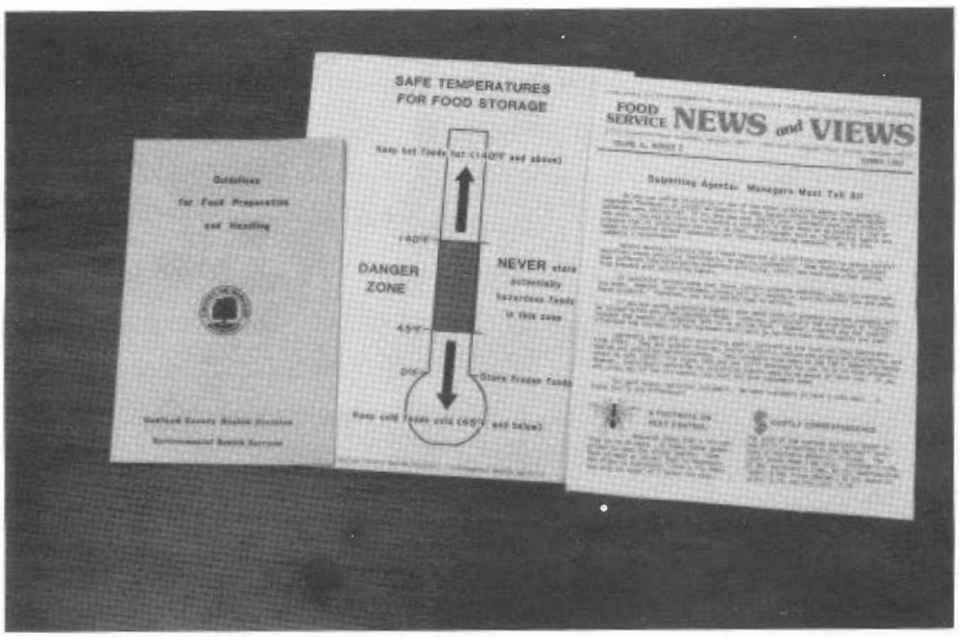
Environmentalists act as consultants, educators, and enforcement officers as they work with food service operators to protect the public's health and enforce the law. As consultants, they review construction plans for new or remodeled facilities. The goal is to make sure that construction, once started, meets both the facility's needs and the code requirements. After construction is finished, the facility is inspected to assure that the approved plans were followed. Once a food service facility is open for business, the manager may have technical problems or concerns or questions about laws and regulations. Environmentalists provide information and suggestions about how to solve problems and operate the facility efficiently.

As educators, environmentalists use a variety of strategies to provide food service operators with the reasons behind the regulations. They conduct training programs when a restaurant opens for business, so that employees know the rules of food preparation and service. Other sessions are held periodically at restaurants when the manager requests help with specific operational problems. A management certification program course offered at least twice a year teaches food service managers about food borne disease prevention, bacteriology, and employee motivation and training. All licensed food service facilities receive a quarterly newsletter published by Environmental Health Services. The publication is a forum for discussions of the latest industry trends and problems. Finally, environmentalists distribute press releases and educational brochures to help the public avoid common food storage, preparation, and service problems in the home.

As enforcement officers, environmentalists inspect approximately 3300 restaurants, 750 markets, and numerous mobile food service facilities and vending machine locations in Oakland County twice a year. An inspection entails checking such items as food sources, water supply, sewage disposal, handwashing and dishwashing facilities, condition of hot and cold food holding units, pest control, employee personal hygiene, and facility cleanliness. Violations are noted and time periods set for correction. A follow-up inspection is made to assure that problems have been resolved.

Environmentalists also respond to a variety of public complaints about restaurants and food service. Each one is investigated thoroughly. Some situations such as food borne incidents* have the potential to affect many people. Rapid action to pinpoint the cause helps prevent the problem from spreading. Follow-up inspections may be conducted to assure full compliance with the law.

Other complaints involve violations of the law which do not appear to have an immediate effect on the public's health. Environmentalists still investigate, however. Some of these complaints suggest that larger problems may develop; others indicate that the management may not be serving customers as well as possible. In either case, the environmentalist consults with the manager to resolve the situation. Environmental Health Services emphasizes education and consultation as well as inspection in working with food service facilities to protect the public's health.



Some of the publications distributed to restaurants in Oakland County.

*See the section on Communicable Disease Control (pg. 21) for more information on food borne disease incident investigations.

FIGURE 5: Food service activities

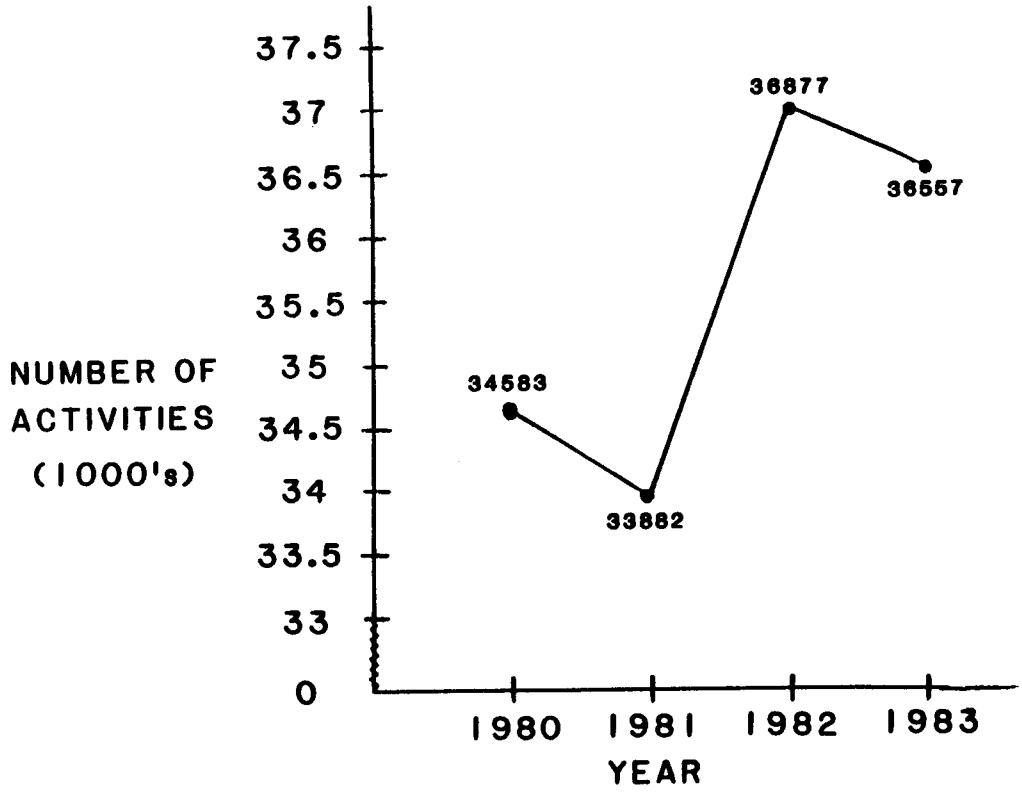
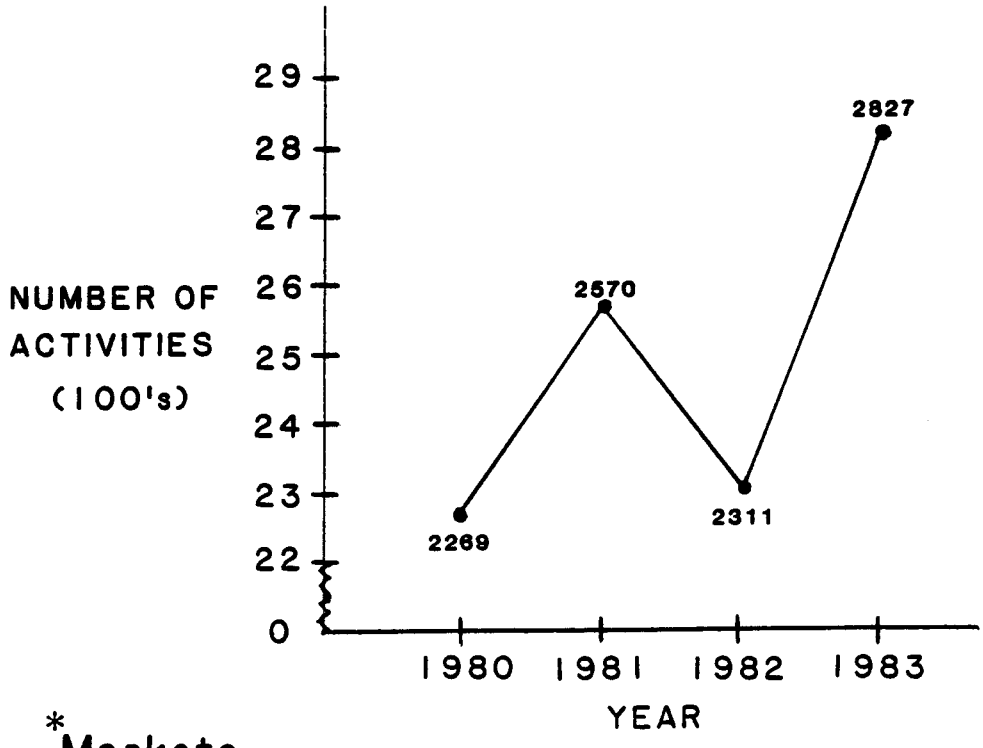


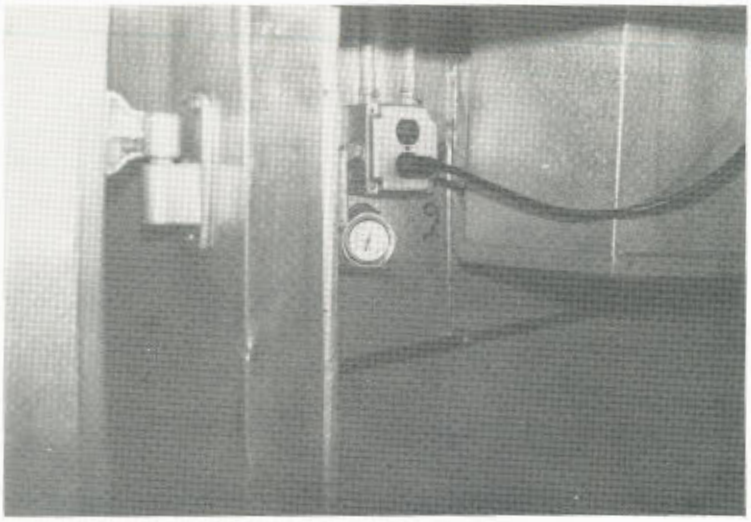
FIGURE 6: Retail food*activities

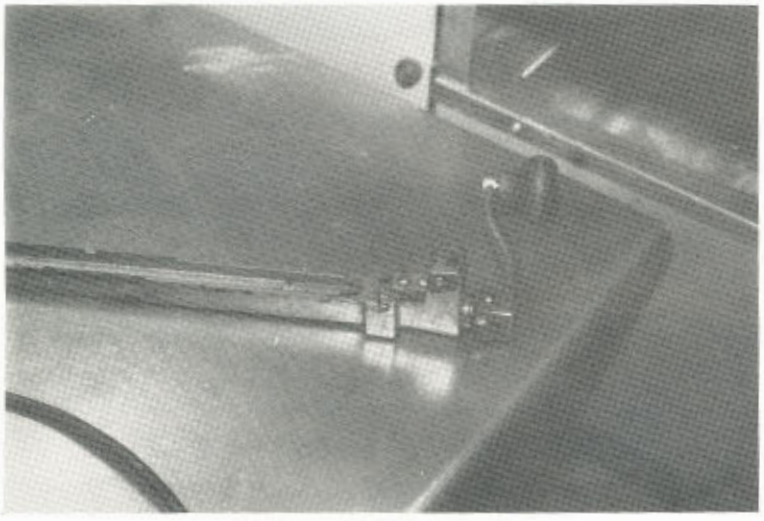


*Markets

Floors in food service facilities must be clean and in good repair.

Food must be maintained at safe temperatures.





Food contact equipment must be clean and sanitary.

WATER RESOURCES

A primary concern of the Environmental Health Services is to assure the safety of private and public drinking water supplies, swimming pools and bathing beaches. Although each group has different legal requirements, the environmentalist's functions generally are threefold.

CONSULTATION

From the planning stages of construction through to operational problems and questions regarding an existing water well, swimming pool or bathing beach, the environmentalist is called in to provide technical expertise.

INSPECTIONS

Inspections are required on all new public drinking water supplies and swimming pools before the facility can be used. Depending upon the number of people served and the volume of water used, the inspection of a public drinking water supply is done by Environmental Health Services or by the Michigan Department of Public Health. After the initial opening approval, swimming pools are inspected monthly by Environmental Health Services.

Private wells are not inspected. However, well drillers are required to submit written records showing that their work complies with the law. Violations of the law are documented by Environmental Health Services and reported to the Michigan Department of Public Health. The State then determines the status of the violator's registration to operate. Private wells may be surveyed and sampled when they are installed simultaneously with a new septic system. All interested parties are informed of problems with the installation or the water quality.

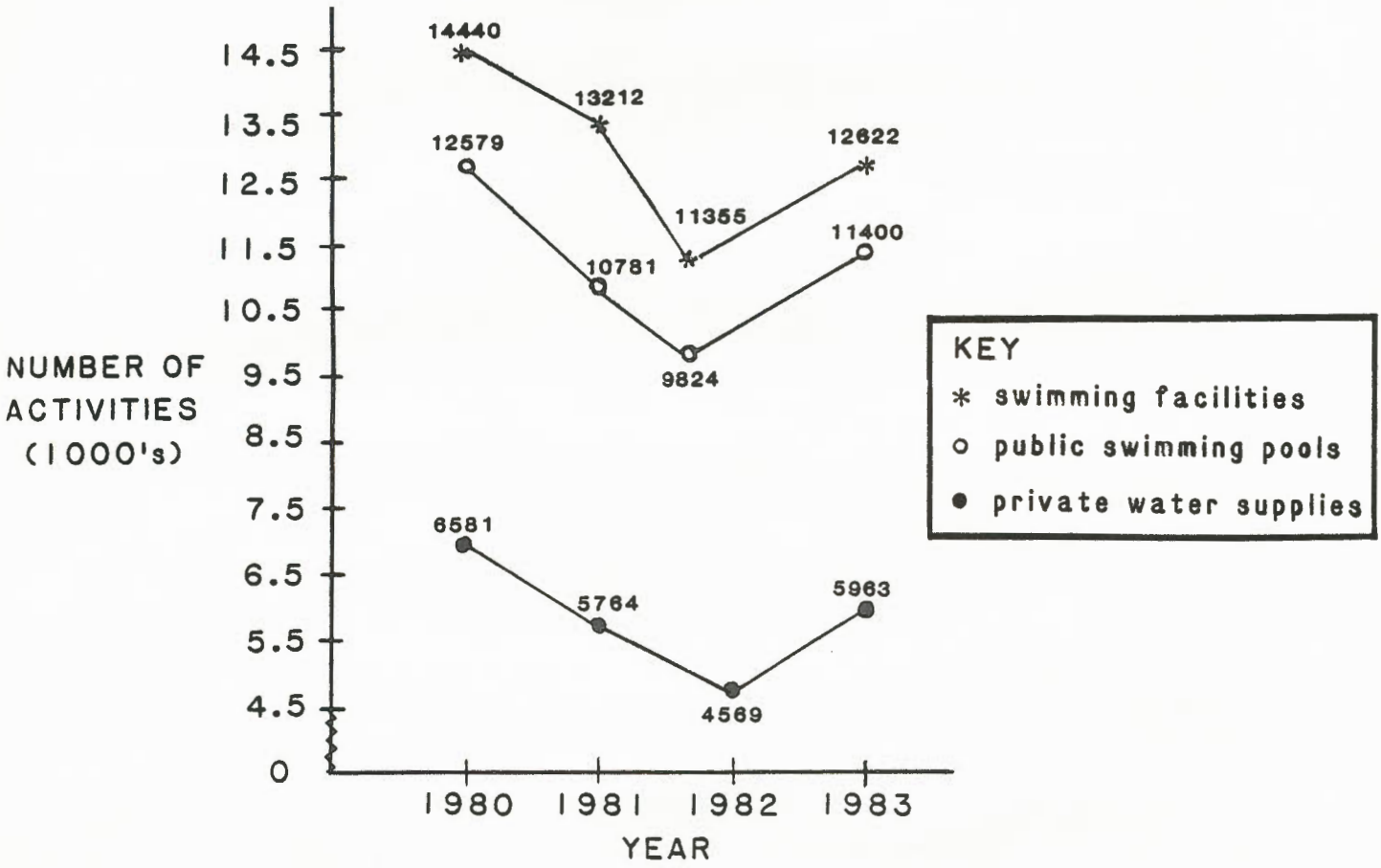
Public bathing beaches are inspected regularly in accordance with the law. Private bathing beaches also may be inspected at the owner's request.

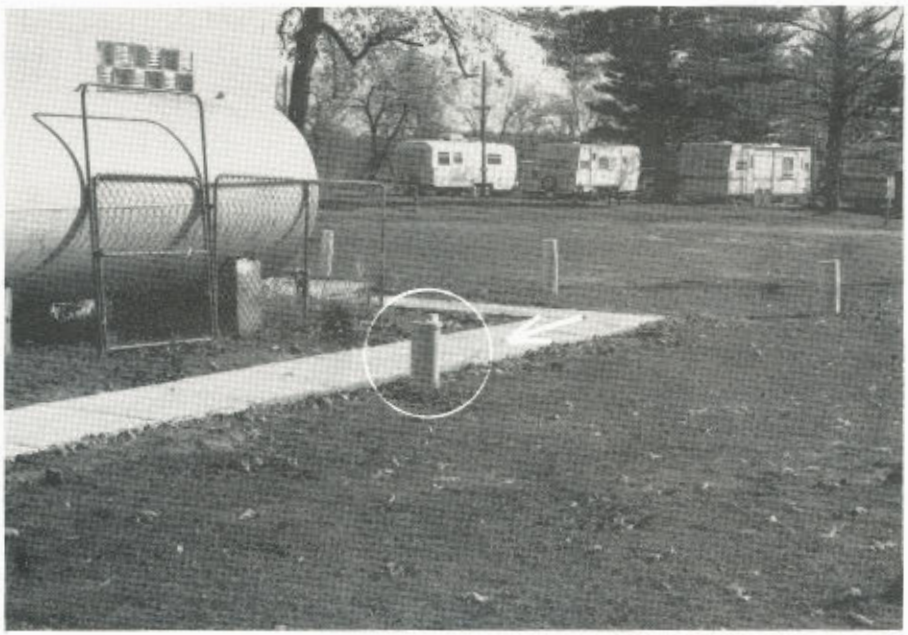
SAMPLING

Sampling of new public drinking water supplies is required before the supply can be used. Thereafter, periodic sampling is required in some cases (as in large city supplies) but definitely recommended for all others. Regular sampling of swimming pools and public bathing beaches is done as prescribed by law.

To safeguard water resources, the environmentalist's role expands, according to problem severity or program need. This reduces the chances for deterioration of recreational waters and pollution of private, public and municipal drinking water supplies.

FIGURE 7: Water resources activities



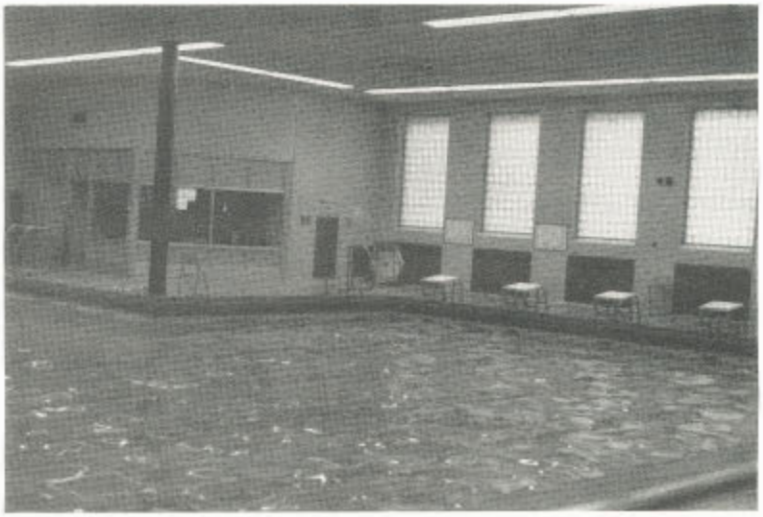


The well casing (see arrow) must be sealed above ground to protect the water.

The water quality of lakes....

and

...swimming pools is monitored on a regular basis.



A water supply must be well isolated from sources of contamination.

SHELTER

If you were asked to define the nature of "shelter", you might only mention a private residence. In reality, however, the term "shelter" applies to any building where people meet, work or live. Because public health problems can spread rapidly wherever large numbers of people gather, environmentalists strive to prevent problems in public places as well as in private residences. Schools, foster homes, day care facilities, motels, hotels, mobile home parks, private residences and the work place are all "shelters" which concern the Environmental Health Services.

A. SCHOOLS

The environmentalist inspects all schools, looking for potential sanitation and safety problems. Areas such as the swimming pool, food service, showers and toilets and general housekeeping are inspected for sanitation problems and public health concerns. In addition, safety problems are noted. Classrooms where chemistry, biology, woodworking, automobile mechanics and art are taught have safety inspections. Here, some concerns are efficient ventilation (to remove contaminants), protecting the water supply from contamination, safety glasses for students, first aid station and kit, protective devices on machinery, noise control, lighting and proper chemical storage.

B. DAYCARE AND FOSTER CARE FACILITIES

The Department of Social Services requires an evaluation of facilities such as day care nurseries, adult foster care homes and children's camps. As part of that process, the environmentalist evaluates the food service, water supply, sewage disposal system and the safety and sanitation of the building. Violations noted might range from the hot water temperature to the safety of the playground. When problems are observed, the Department of Social Service is notified. A follow-up visit then will be made if required.

C. TRANSIENT

Motels or hotels may be important forms of shelter to the businessman or vacationer. Environmental Health Services cooperates with local municipalities in investigating nuisance complaints and unsanitary conditions at these facilities.

D. RESIDENTIAL

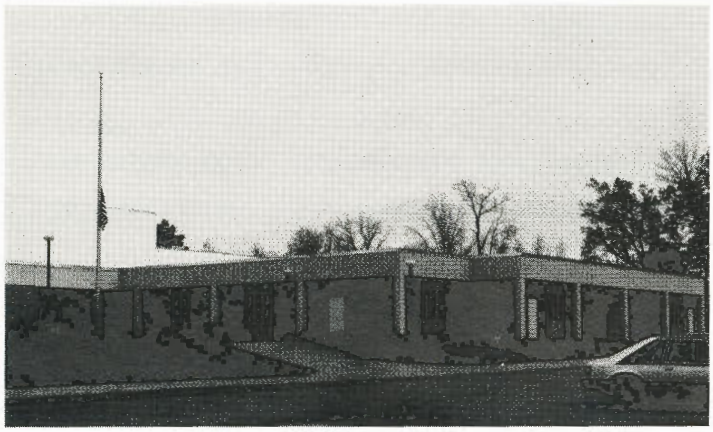
Since some people view housing inspections as an invasion of their privacy, inspections are never initiated without the owner's permission. However, since there is a definite correlation between substandard housing and poor health, time is spent helping to assure that the health and safety of residents are not threatened by their environment. These

efforts include assistance to local units of government and the Department of Social Services in resolving insanitary conditions, pest infestations, overcrowding, unsafe structures and many other kinds of problems.

Mobile home parks are a special kind of residential environment. Environmental Health Services is directly involved with every mobile home park in the county to help assure that the occupants will have a safe and sanitary environment.

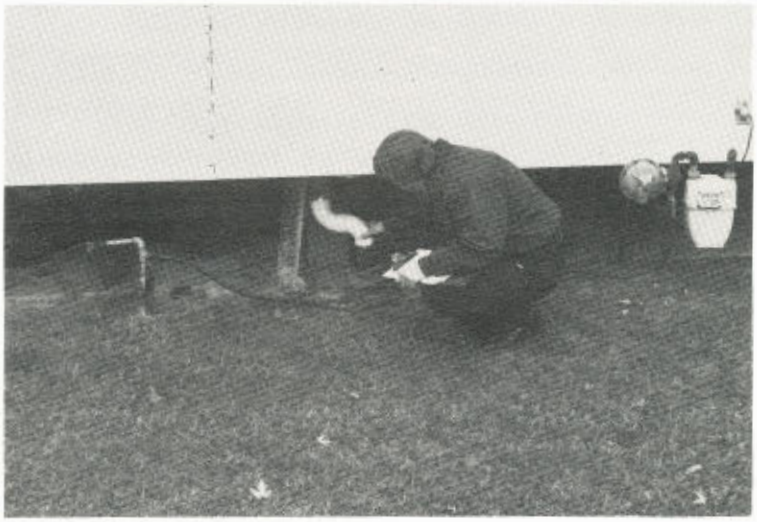
E. WORKPLACE

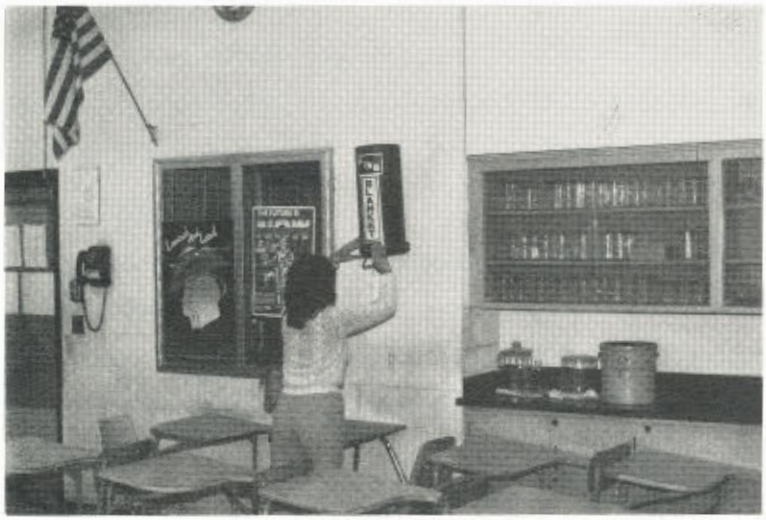
There are environmental conditions in places of employment that may adversely affect one's health and safety. Health problems at manufacturing facilities are investigated by the Michigan Department of Public Health, Department of Labor and/or local units of government. Environmental Health Services, however, may be requested to investigate complaints at commercial establishments such as office buildings.



A healthy school environment is important to environmentalists.

Sewer connections in a mobile home park must be secure.





School safety is a concern; here a fire blanket in a laboratory is inspected.

LAND PROTECTION

Oakland County has a large, expanding population. As this population grows, there is a demand for land developments to provide new housing and industry. Land is also needed to safely dispose of increasing amounts of solid and liquid wastes. One concern of any new development must be the health and safety of the people of Oakland County. Environmental Health Services utilize Land Protection programs in an effort to balance the needs of a growing population with the need to use limited land resources in a manner which is environmentally sound.

A. LAND USE AND PLANNING

One aspect of land protection concerns the suitability of land for its intended use. Site plans are reviewed, prior to construction, to determine if the tract of land is compatible with its intended use. In the case of a housing project or industrial concern, the basic concern is that a sanitary sewage disposal system and a safe, adequate water supply can be provided. Plans are evaluated and site inspections made to determine if (a) soils are suitable for sewage disposal (b) the water supply is protected from known sources of contamination. All problems are communicated to the applicant and local and state authorities. Approval is withheld until the problems have been corrected.

Where a site proposal concerns the disposal of solid or toxic wastes, Environmental Health Services plays an important role in evaluating the application. Plans are reviewed and site inspections made in cooperation with local and state agencies. The main concern is that the proposed facility will not create problems such as ground water contamination.

Important objectives in the land use planning program are the health and safety of Oakland County residents and the preservation of natural resources. Utilization of this program helps assure that land development will be an asset to the community rather than a liability.

B. TOXIC AND HAZARDOUS WASTE MANAGEMENT

The subject of toxic and hazardous waste management has received increased public attention in recent times. (Figure 8 shows the increased activity in this area.) This attention focuses on the need to recycle, incinerate or dispose of these wastes so as to protect the water we drink and the air we breathe. Environmental Health Services is at the forefront of a cooperative effort of state, local and county agencies to address these concerns.

The law separates toxic and hazardous waste producers into two groups: Small quantity and large quantity generators.

Large quantity generators produce more than 2200 pounds (approx. 1 ton) of waste per month. These people are usually concerned that large amounts of hazardous wastes are disposed of efficiently and in an environmentally sound manner. When requested, information is provided to these people regarding acceptable methods for the disposal of hazardous wastes.

Small quantity generators produce less than 2200 pounds of waste per month. People are more aware now than ever before of the effects that a small amount of a toxic chemical can have on the environment. They are concerned about the safe disposal of their toxic wastes and may call Environmental Health Services for information.

Environmental Health Services has specialists who can answer these inquiries. Certain information must be available, however. The complete chemical name of the material must be supplied as well as the manufacturer's name and the amount of the chemical to be discarded. Then the chemical is classified according to its toxic effect. Where the information is available, an appropriate disposal method is selected which will minimize the environmental effects.

C. REFUSE MANAGEMENT

Our diverse economy and advanced technology have produced large amounts of refuse. The safe and sanitary disposal of these wastes is of major concern to Environmental Health Services.

Refuse must be stored at the point where it is produced until it is collected. Storage must be clean, orderly and nuisance-free. Once collected, it is important that the waste be reduced in size before it is buried. Otherwise, there would not be enough land available to bury all of the refuse we produce. Thus, processing is needed. Grinding, baling, compacting, separating, composting, and incineration are all processing methods. Finally, the waste remaining must be disposed of in some manner. Some wastes are recycled (e.g., glass, tin cans, paper) while the rest are buried in the ground.

The above processes must be accomplished without threatening the environment. Storing, hauling and processing wastes must be done without creating odors, wind blown debris or pest problems. The final burial or burning process must not threaten the air we breathe or the water we drink.

Environmental Health Services, in cooperation with the Department of Natural Resources, inspects landfills, municipal incinerators and transfer stations. Environmentalists also assist local communities in investigating nuisance complaints regarding improper storage of refuse.

The Environmental Health Services encourages the recycling of solid waste products whenever possible. If the paper, cardboard, aluminum, iron, plastic, glass, etc. were all recovered and recycled, we would not need to commit as much land for purposes of refuse burial. It must be recognized, however, that some land will always be needed for refuse disposal however much we recycle and conserve resources.

D. SEWAGE DISPOSAL SYSTEMS

The problem of water pollution and disease transmission from sewage is an old and basic one. In the last ten years, large strides have been taken to curb this problem. While municipal treatment plants may be the preferred solution in some instances, they are not always available or feasible. A direct responsibility of Environmental Health Services is to regulate on-site sewage disposal. (Figure 9 illustrates how this responsibility has increased in the last year.)

An on-site sewage disposal system consists of a septic tank and underground absorption area. In these cases, site and soil evaluations must be performed to assure that there is sufficient land, a coarse, dry soil formation and adequate protection for the ground water supply. If these evaluations are favorable, a permit may then be issued for constructing an on-site disposal system. As the septic system is installed, periodic inspections by environmentalists assure that the installation minimizes the danger to the environment. When an existing septic system fails, a pollution problem and nuisance may result. At this point, permits and inspections are required so that the problem can be quickly and efficiently resolved.

Septic tanks must be pumped periodically if they are to remain effective. Septic tank pumper trucks are inspected by the Environmental Health Services, in cooperation with the Michigan Department of Natural Resources, to be sure that they have the necessary equipment to render the service. The sites where septic sludge is disposed of are also inspected to be sure that there are no odors or nuisance conditions and that there is no danger of environmental contamination.

E. CAMPGROUNDS

Campgrounds are an important form of recreational housing for vacationers. The environmentalist inspects these sites to be sure they are safe and sanitary. Such areas as the water supply, sewage disposal, cleanliness of service building, electrical connections and condition of the bathing beach (when applicable) are all inspected. Violations are then reported to the Michigan Department of Public Health and to the operator, with recommendations on ways to correct outstanding problems.

FIGURE 8: Toxic and hazardous waste management

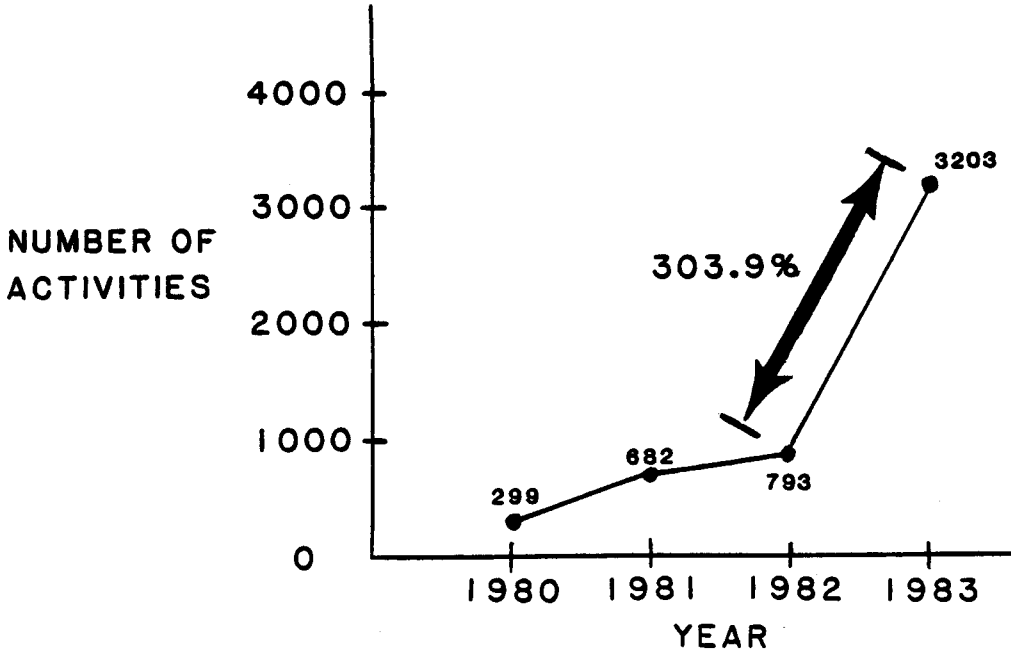
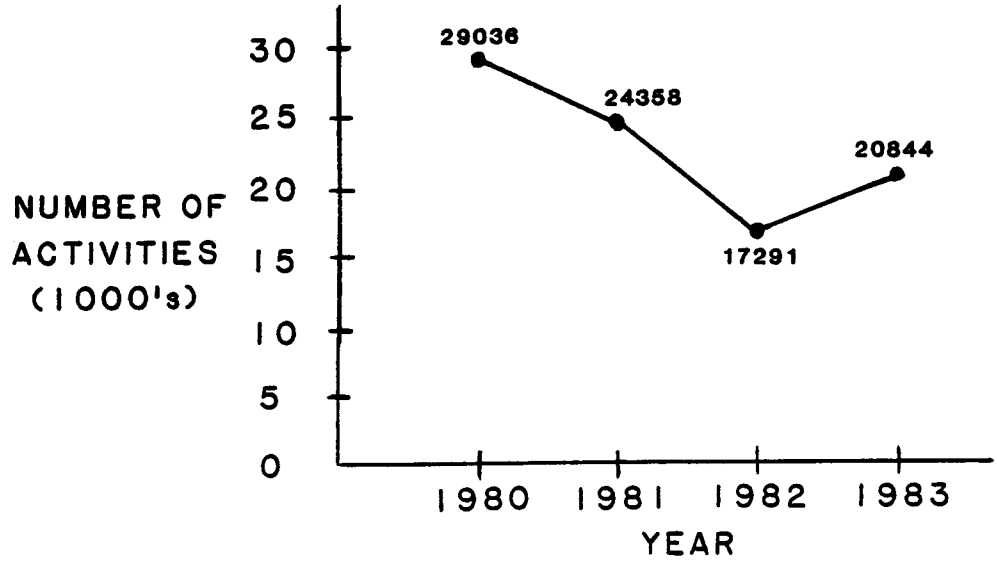


FIGURE 9: Sewage disposal system activities



Campground inspections are a part of the environmentalist's duties.

Soil is evaluated for on-site sewage disposal.

The septic tank outlet must be well sealed.

The sewage disposal field is inspected.

Garbage is compacted and covered at a sanitary landfill.

A plastic liner is needed at some sanitary landfills to protect the ground water from contamination.

COMMUNITY SERVICES

Some important services are not included in the program areas just described. These services may not be requested because they are not recognized as environmental health activities. This does not lessen their importance, however. All of these services combined represent 12.4 percent of the agency's 1983 activities count. (Figure 10 illustrates the growing demand for two of these services.) This committment indicates the willingness of the environmentalist to advise and consult on different types of environmental concerns. The range of services provided emphasizes this depth and complexity of the environmentalist's job.

A. COMMUNICABLE DISEASE CONTROL

Controlling the spread of disease is a basic public health service. Environmental Health Services works to change environmental conditions (e.g. unsanitary restaurants, polluted air and water) which encourage diseases to develop and spread. Environmentalists also work with other health professionals (nurses, epidemiologists) to monitor the incidence of disease and to coordinate activities for preventing its spread.

Mosquito-borne encephalitides are rare but important diseases monitored by environmentalists. These diseases may be spread by mosquitoes from animals to man.

Collection of blood samples from wild birds provides a measure of the infection rate. If significant numbers of birds are found to have been infected, emergency mosquito control measures may be ordered to stop disease transmissions before an epidemic of human disease can occur.

Environmentalists also investigate cases of infectious hepatitis when they suspect that the disease has been transmitted by contaminated water or food. Suspected sites are inspected to determine whether the water supply and/or sewage disposal system are the source of the problem. When a restaurant employee is infected, environmentalists advise the appropriate people so that the person does not handle food until he or she is fully recovered.

Outbreaks of food borne disease are another concern. When an incident is reported, environmentalists act to isolate its source and contain its spread. They interview ill persons, sample potentially contaminated food and water, and inspect affected buildings. Factors are noted which may have contributed to the outbreak, and changes are recommended or ordered, depending on the severity of the problem. In some cases the facility may be closed until the matter is resolved.

Prevention plays an important role in investigations of food borne disease. In each case, environmentalists explain how the disease is spread, point out factors contributing

to the disease, and describe warning signs. In this way people are prepared to prevent food borne disease from recurring and to alert Environmental Health Services promptly when an outbreak is suspected.

B. ENVIRONMENTAL SURVEY

There are times when the analysis of an environmental problem is complex and time consuming. Incomplete or inaccurate information stops the environmentalist from arriving at the cause. Because of the problem's size and scope, there may be a number of people, geographical areas and/or environmental factors involved. These elements may or may not be significant.

An environmental survey is used to assess the importance of each element. One by one, the insignificant factors are eliminated. The problem's scope is reduced. The survey results show which factor(s) are associated with the problem. Then, the environmentalist can focus on those area(s) in order to arrive at a solution.

Environmental surveys are used in three basic ways.

First, the cause of the problem may not be clear. When a complaint is registered about sewage pollution, the source of pollution is not always obvious. The sewage may be in a field, surrounded by houses. A survey is used, first, to establish those homes which could be polluting (i.e. with septic systems) and second, to test the septic systems until the source is found.

Second, it may be important to locate the problem. A survey of a neighborhood rodent problem may show several homes with rat populations and ideal environments for them. The control program can then attack the problem at its worst point.

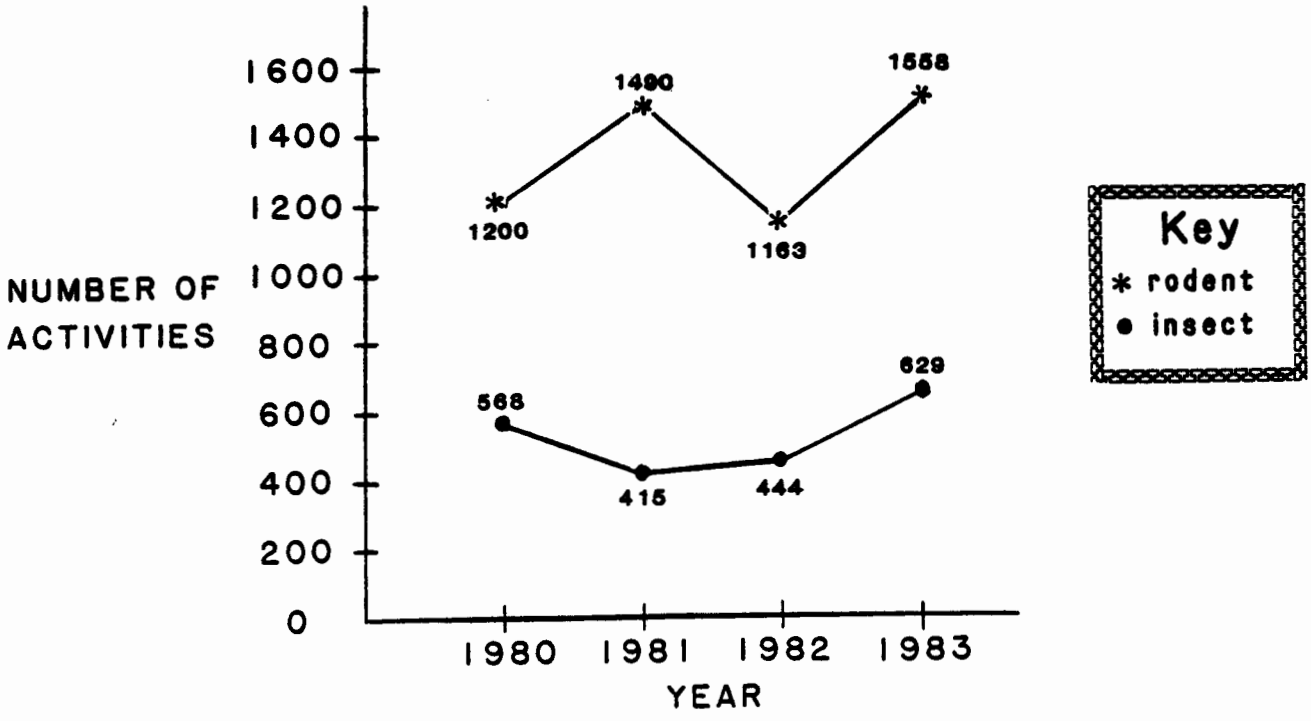
Last, an environmental survey may be used before a problem or complaint develops at all. One example of this use is the mortgage evaluation (a description follows). The survey is done to determine if there are problems with environmental conditions such as water supply and sewage disposal. This survey is requested before a house is sold so that all concerned parties will be informed about any problems that might exist.

C. MORTGAGE EVALUATIONS

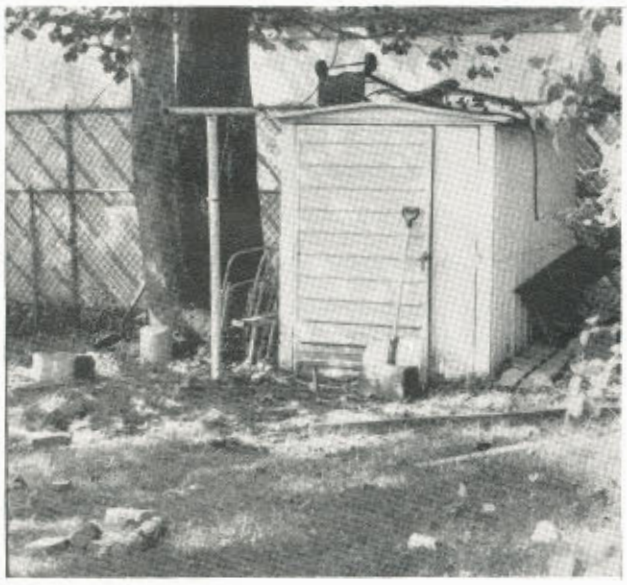
Purchasers of a home may want information about the home's water supply and sewage disposal systems. Before they purchase the home, they want to know as much as possible about the construction of the systems and any existing or potential problems.

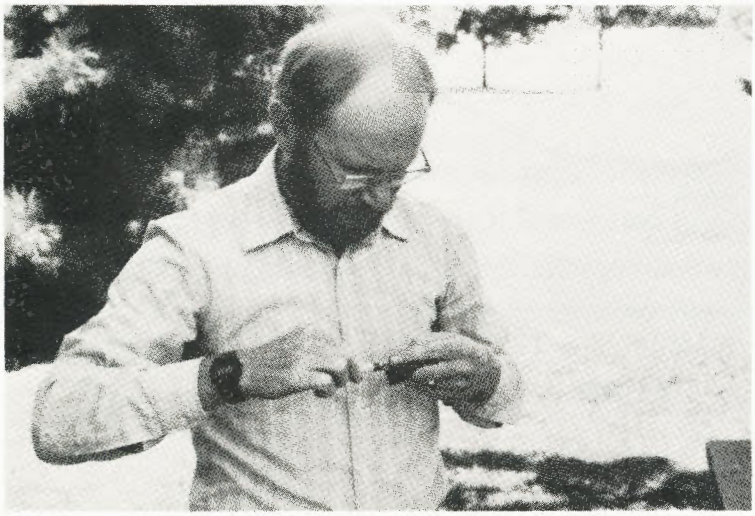
A water, sewerage and environmental survey attempts to address these concerns. The environmentalist makes an evaluation based on the information gained from the application and the site survey. During the site visit, the well and septic systems are evaluated. One objective is to determine, as nearly as possible, if the systems have construction defects. The well, for example, must be properly isolated from contamination sources such as the septic system. The exposed well casing and pump are examined to see whether or not they satisfy minimum construction requirements. Water samples are taken. The second objective of the evaluation is to determine if the water sample has an acceptable bacteriological quality. Tests are also done on the water for detergents (ABS) and nitrates (NO_3). In addition, the septic system area is inspected to be sure there are no signs of failure. Existing and/or potential problems with the water supply and sewage disposal systems are noted on a report. The applicant is given a copy of the evaluation and all supporting data (e.g. water sample reports).

FIGURE 10: Insect and rodent control

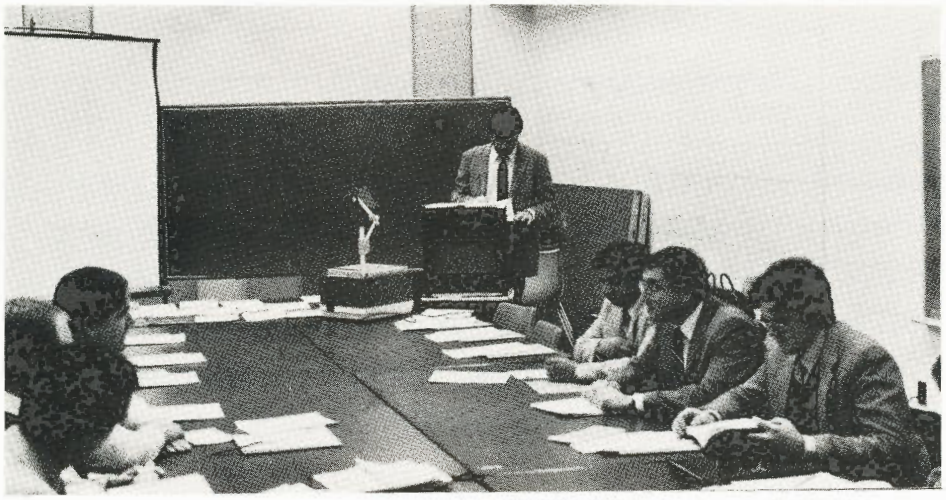


Conditions like these produce citizen complaints.

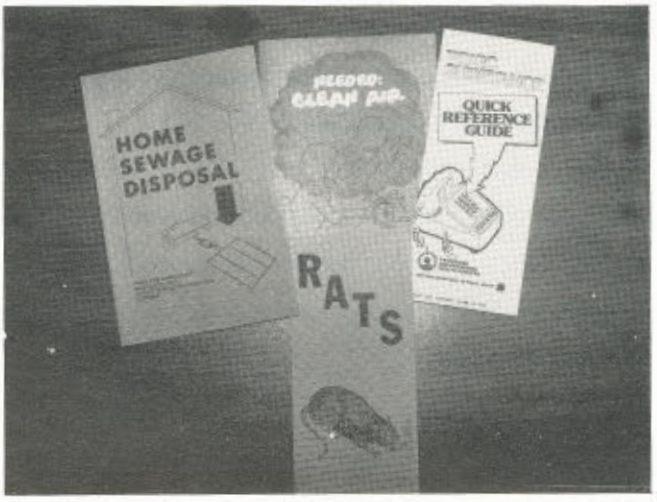




Blood samples from birds measure the rate of mosquito-borne encephalitis in Oakland County.



Educational seminars keep staff members informed.



Some of the booklets available for use by the public.

ENVIRONMENTAL HEALTH EDUCATION

The environmentalist is often seen by the public as an inspector who recites the law and writes violations. But the effort to solve public health problems involves much more than that. Often the public must be called upon to help. The environmentalist uses the principles of health education to persuade clients and the public of the problem's importance and the need to resolve it. Educational programs and public forums are sometimes used to explain the problem and answer questions. Resources in this effort include press releases, pamphlets and audio-visual materials.

The environmentalist also works to expand his/her own professional knowledge. Staff members regularly attend state and national conferences held by professional organizations such as the Michigan Environmental Health Association and the National Environmental Health Association. Training programs are held in-house to keep environmentalists informed on the latest technical information. Trade journals, books, bulletins and news releases are compiled for staff members to review.

New developments in environmental health are constantly occurring. Because the public deserves the best possible service and health protection, it is very important for staff members to keep abreast of technical and professional developments. Health education, both in-house and in the public sphere, helps all concerned parties to keep current on problems of concern.