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Building Blocks of Knowledge

DNR research began with fish, game and forestry a generation ago. Now, in accord with today's needs, recreation and environmental problems also are subjects of fact-finding probes. Here's a quick rundown.

If you don't know where you're going, any road will get you there. And you may be in for quite a few surprises, too often disagreeable.

Successful management programs don't happen by chance. They require careful planning, adequate funding, firm execution and, above all, a good staff. Plugged in at each level of operation usually are a host of facts and figures gleaned from well designed research. These data are building blocks of knowledge upon which sound management decisions can be based.

Research has helped guide programs of the Wisconsin Department of Natural Resources for over 30 years. New studies have added more blocks to our storehouse of knowledge, giving some programs a face-lifting. Research is also changing. Computers, new data-gathering techniques and a greater awareness of environmental problems have helped shape the current direction of DNR research.

An overview of activities in DNR's Bureau of Research will quickly reveal a broad program focused on current environmental issues. Some projects are oriented toward fish and wildlife species. Some concern our forest and water resources. Still others are related to people problems—pollution control, solid waste disposal, floodplain management and outdoor recreation. In each case, the research objective is similar—finding better methods for the protection, use and development of our natural resources compatible with established ecological principles.

Research activities are funded from a dozen sources. Federal and state tax dollars, hunting and fishing license fees, and gifts and grants all help to support a progressive research program.

DNR biologists and environmental engineers conduct many of the projects. However, department specialists frequently team up with personnel from universities and other organizations for special studies.

In any one year about 100 studies are conducted or coordinated by the Bureau of Research. Here in a nutshell are examples of research activities grouped by units under which specific projects are conducted.

WILDLIFE RESEARCH—Statewide studies emphasize farm, forest and wetland game species and their habitat requirements. Recently-completed research has provided guidelines for a scattered wetlands preservation and management program. Aimed primarily at pheasants, it will also give other wildlife a boost.

A federally-financed woodcock and mourning dove research project is in full swing. This work is

Research searches for answers to the unknown. For example, if we knew exactly why walleye reproduction succeeds or fails, then it might be possible to make some changes in management that would result in better fishing. That is the reason this man is determining the abundance of zooplankton or "water fleas," the natural food of newly-hatched fish.

providing answers to increase the recreational opportunity offered by these two migratory birds.

Ducks and geese receive considerable attention through a coordinated research effort with the federal government. Habitat inventories, harvest control, hunter training, and species management are some of the activities related to this inter-agency project.

Long-term deer and grouse research has been instrumental in shaping new wildlife management programs on forest lands. Deer population statistics are gathered annually to provide data for setting harvest quotas for deer management units. A monumental study on prairie chicken ecology is nearing completion. Management recommendations to save this remnant population in central Wisconsin are already in effect.

FISHERY RESEARCH—Projects are conducted to develop, evaluate and recommend better methods for managing Wisconsin's cold and warm water fishery. A new project is aimed at investigating alternatives for managing northern pike spawning marshes. Stunted panfish problems are being studied and new techniques are being developed to provide better survival of stocked walleye and muskellunge.

Brown trout are receiving major attention as researchers evaluate the effects of removing undesirable shrubby vegetation from stream banks. More sunlight and better fish growth are the objectives. Spring pond dredging activities are being studied to determine optimum conditions for increasing trout in this unique habitat.

Also under investigation are new chemicals and methods for controlling undesirable fish such as the carp and alewife. Economics of the commercial fishery in the Great Lakes are also being reviewed.

WATER RESOURCES RESEARCH—Projects in this unit relate to both fish and wildlife resources in the aquatic environment. Recent findings from pesticide research are significant factors in decisions regarding controls on use of persistent pesticides. A study of small recreation reservoirs has shown that these artificial water bodies frequently exhibit many of the problems associated with excessive eutrophication. Recommendations were made to correct these problems and improve water quality.

With financial assistance from the Upper Great Lakes Regional Commission, natural lake eutrophication problems are being tackled in northern Wisconsin. Wetlands along the shores of Lakes Michigan and Superior are being inventoried and their environmental values documented.

FORESTRY RESEARCH—Through the cooperative efforts of University of Wisconsin researchers, many forest management problems are being solved. Current projects deal with timber losses caused by forest insects and diseases, management of plantations and natural timber stands, and redesign of forest land use programs.

Accelerated research is underway to develop better methods to control the pesky jackpine budworm. Also up for study is the impact of forest tax laws on the state's economy.

RECREATION RESEARCH—Although still a new activity, recreation research is shifting into high gear. Studies are aimed at providing information on current recreation facilities and future needs to update the State Outdoor Recreation Plan. The revised plan will make Wisconsin eligible for additional federal monies to finance state and local programs. Several studies are nearing completion on the types of privately owned recreation facilities available for public use.

Commercial recreation research is turning up new information for design of mobile home facilities to enhance environmental quality. Back from the printer is a report dealing with solutions for conflicts in water uses.

ENVIRONMENTAL PROTECTION RESEARCH— This broadly based program involves studies for solving problems in water pollution control, solid waste disposal, public and private water supply, and shoreland management. Department technicians have teamed up with university personnel to tackle many of these complex problems.

Several projects are concerned with effects of pesticide residues in the environment. While the chlorinated hydrocarbons such as DDT have received major attention, investigations were recently launched to study sources and seek solutions to mercury contaminants.

Researchers are evaluating sewage treatment facilities to find better ways to handle effluent. Recommendations are also being prepared to improve disposal of various industrial wastes.

New aerial photography techniques are being tested for their effectiveness in mapping floodplains. Refinement of these techniques will permit local governmental units to more accurately delineate floodplains and at a much reduced cost than older methods.

In the planning stages are projects focusing on air pollution. And it's a sure bet other environmental problems for research are just down the road.

THE BASIC PRODUCT of the research effort is knowledge. This knowledge cannot always be readily converted into acres of land for recreation, game in the bag or cubic feet of quality water. However, this knowledge, when translated into action programs, provides the basic ingredients necessary to manage effectively the natural resources of Wisconsin.