

NATURAL RESOURCES

Saving Natural Resources

► **IMPORTANT** natural resources should not be destroyed under the "new starts" being made by the Kennedy Administration, a top wildlife expert charged.

Federal agencies have a long way to go before they begin to pull together to preserve the nation's legacy of abundant natural resources, Ira N. Gabrielson, president of the Wildlife Management Institute, said. He praised President Kennedy's evaluation of the nation's resources situation at the opening session of the 26th North American Wildlife and Natural Resources Conference in Washington, D. C.

Mr. Gabrielson said that taking the water pollution problem "out of the fifth sub-basement" of the Health, Education, and Welfare Department is a step in the right direction. But Federal agencies still have many disputes to settle.

The Bureau of Land Management, he said, is "dominated—and frustrated—by one small group of resource users," the cattle owners who graze their herds on some of the 475,000,000 acres under BLM administration for 22¢ per cow per month while hunting, fishing, mining and lumbering are kept at a minimum.

Mr. Gabrielson also noted that there is something of a running feud between the Departments of Interior and Agriculture. Agriculture, he said, destroys the wetlands breeding grounds of waterfowl faster than Interior can buy up new grounds with funds from duck stamp purchases.

Agriculture continues to spray toxic chemicals in pest-plagued areas while Interior tries to keep birds and wild mammals in the same area from being poisoned. Millions are spent for the chemicals, but neither department has enough funds for

their research departments to find out how dangerous the chemicals are.

The State Department also is involved, Mr. Gabrielson said, because the United States promised Mexico and Canada that conservation efforts will be maintained for migratory species.

Departments and agencies need money, Mr. Gabrielson concluded, but they also need coordination.

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Bird Birth Control

► **THE BIRDS** that cause plane crashes over airports may be eliminated with a birth-control chemical once rejected for human use by the Planned Parenthood Association.

The chemical, triethylenemelamine (TEM) interferes with the formation of gametes, or reproductive cells, in both male and female blackbirds. It works just as well on starlings, the bane of the runways.

Dr. David E. Davis of the Pennsylvania State University, University Park, has found that in birds eating corn mixed with TEM, no useful reproductive cells are formed for two months.

At the 26th North American Wildlife and Natural Resources Conference meeting in Washington, D. C., Dr. Davis said that if the birds could be induced to eat the treated corn for only three or four days at the right time of year, they would be "out of the running" during the entire breeding season, and thus for the whole year, until the next breeding season.

In the first field trials, TEM reduced blackbird fertility by about 20%, meaning

that 20% fewer young were hatched than normal.

About six years ago, TEM was being considered as a birth-control chemical for human use. It halted production of human sperm and ova well enough, but it also damaged human blood cells. In rats, blackbirds and starlings; however, it seems to have no harmful effects on blood cells.

The real problem, Dr. Davis said, is not finding an effective gametocide, as TEM is called, but working out the mechanics of its use. The chemical can cut down reproduction rates in the rare whooping crane as easily as in the pesky starling.

Part of Dr. Davis' work was done under contract to the U. S. Fish and Wildlife Service, the agency charged with finding some way of keeping birds away from airports. The bird birth-control chemical might be used, Dr. Davis said, as one phase of a many-sided plan. It could be used without endangering other birds if treated feed were placed in winter roosting quarters frequented only by the blackbirds or starlings.

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PHYSIOLOGY

Sensitive Thermometer Probes Nerve Chemistry

► **THE CHEMISTRY** of nerves and muscles is being studied with the help of a tiny thermometer that measures temperature changes in millionths of a degree.

Bernard C. Abbott of the University of California, Los Angeles, zoology department is seeking to learn more about the chemical reactions that make possible nerve and muscle impulse transmission by measuring heat production of such reactions in nerve cells.

These infinitesimal temperature variations, plotted during a fiftieth of a second, give some indication of the sequence of chemical events occurring during nervous activity. This activity includes a complete cycle, from initiation of the nerve impulse to the nerve cell's complete recovery and return to readiness for future activity.

"Cracked crab" is the subject of part of the investigation. Spider crab legs are cracked, and the leg nerve is removed for study.

Nerve cells from the electricity-producing organs of the torpedo ray are also being investigated. The cells are electrically stimulated and heat measurements made during transmission of impulses.

Rapid movement of charged particles (ions) of sodium and potassium across the nerve cell membrane occurs during an impulse.

Sodium ions rush into the cell from extracellular space, and potassium ions stream out during particular phases of transmission.

The heat of this exchange reaction appears to constitute about half of the total heat produced in the initial period of cell stimulation.

From such studies a better knowledge of the basic chemistry of nerve and muscle action is evolving.

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Water Pollution Check

► **A NATIONAL** water resource program supported fully by all levels of Government and other organizations must be developed to combat water pollution.

Until State and Federal governments take a more active role in controlling water pollution, the objectives of a national water pollution control program cannot be met, the Public Health Service Water Pollution Control Advisory Board has concluded.

Although states have primary responsibility for water pollution control, their programs, with few exceptions, are entirely inadequate, the Board charged. State agencies must be provided with adequate funds and given more power to carry out their programs.

The Board recommended a crash program in Federal aid that includes construction of city waste-treatment plants and research laboratories, and grants for state and interstate water pollution agencies.

The Board met in Washington, D. C., to review the findings of the Senate Select Committee on National Water Resources. Although the Senate study covered a much greater scope in water planning, the Board emphasized that the pollution control program must be given the highest priority in water resources developments.

Water pollution control is an integral part of the national water problem, and "water quantity requirements can be met . . . only if water quality is maintained," the Board reported to the Surgeon General of the Public Health Service.

The advisory group agreed with the major recommendations of the Senate Select Committee. The Board especially emphasized the Senate recommendation of a ten-year Federal program to states for water resources planning.

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