

ment oil recycling program, grants to states implementing waste oil management plans, the use of resealable containers with mandatory deposits for retail oil sales, and an oil recycling consumer education program.

Economic factors and increasingly stringent environmental regulations are forcing the larger consumers of lubricating oil to cease polluting to just dumping their used oil. If we are ever to close the gap left open by the do-it-yourselfer, concludes Richard Morris, then consumer education will play a key role in the resolution of the "other" oil crisis.

Mississippi Water Birds Decline

Waterbird colonies along the upper Mississippi River floodplain are declining, according to the conclusions of a year-long pilot study, conducted by biologist David H. Thompson of the University of Wisconsin. Thompson's goal was to determine the colony locations and populations of larger colonial waterbirds nesting within the 4-6 mile wide floodplain of the upper Mississippi River between Minneapolis and St. Louis.

Counts and population estimates were made by two complete aerial surveys, which covered every sandbar, island, and backwater of the 624 mile long study area. After each survey, colonies were visited on the ground to verify population counts, sample vegetation, and look for disturbances. Results of these studies indicate a substantial population decline of great blue herons and egrets in the southern half of the study area, a decline which has probably been occurring over several decades.

Comparison of data showed fewer and smaller colonies in the southern half than the northern half (average 20 nesting pairs per colony in the northern half versus 7 pairs per colony in the southern half). The southernmost great blue heron colony has decreased from 15 to 4 pairs in recent years, and six great egret colonies south of Clinton, IA, have disappeared. Two colonies of cormorants, which are on the endangered species lists of Wisconsin, Illinois, and Missouri, are also known to have disappeared in the southern portion.

No new colonies were found. Of the seven colonial species found or formerly occurring, says Thompson, four are declining in population and least terns have probably been extirpated from the study area. Only two species, Forster's terns and yellow-crowned night herons, were found to be expanding their ranges. The great differences in present populations between the two regions, says Thompson, indicate a substantial population decline in the southern half, which is likely to spread to the northern half as development proceeds. Drainage and diking, development of navigation facilities on the river, and the establishment of more industry along its banks is of main concern.

Few undisturbed or undeveloped refuges for herons and egrets are found outside of the Mississippi floodplain, underscoring the significance of Thompson's findings.

The first step toward reversing the population decline, says Thompson, is identification of the causes, and, secondly, designation of critical feeding and nesting areas for preservation and management. Features Thompson identified as critical regarding location of colonies were: tall trees (particularly sycamores) for nesting; proximity to dams, marshland, water, and river junctions; and barriers to human disturbance.

This study was timely since no studies of colony sites and populations of colonial water birds along the upper Mississippi have been published. However, Thompson warns that with only one year's data on hand and incomplete

knowledge about populations outside of the floodplain these results should be taken as preliminary. Nevertheless, these findings provide a warning of an advancing environmental degradation of the river and the surrounding floodplain. Says Thompson, "The birds are apparently warning us of an environmental problem in this area, which should be investigated." — *Hermann Sveinbjornsson, Conservation News*

Slime Saves Time

The mucus on the surface of a fish's skin or scales is a material that sharply cuts friction as the fish speeds through the water. Ship designers are now studying this film, and the way it adheres to fish, to see if a similar system could be made available for ships. Skin friction causes drag on ships, slowing them and forcing greater fuel needs. One artificial material currently under study for this purpose is polyethylene oxide.

Tree-Savers Outnumber Tree-Sellers, Reports Opinion Poll

A study commissioned by the industry-related American Forest Institute shows that Americans prefer to have forest trees preserved rather than cut for timber, reports the National Wildlife Federation. The study, undertaken to measure attitudes toward forest-related recreation vs. development, especially towards wilderness, was conducted in September, 1977 by the Opinion Research Corporation, Princeton, NJ.





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