in lake pollution prevention and control, as would be authorized by these bills.

The Federal Water Pollution Control Administration, in a bulletin issued in 1964 when the agency was a unit of the Public Health Service, listed the following effects from severe water pollution:

(1) transmission of enteric diseases by water inadequately treated, (2) transmission of diseases by insects from polluted streams, (3) harmful reduction of individual water intake because of water potability, (4) possible toxicity of chemical and metallic wastes, (5) neuroses caused by noxious odors from polluted streams, (6) spread of diseases by cattle and other animals having access to polluted streams, (7) loss of recreational areas, and (8) economic changes.

Pollution of lakes, of course, may come from many sources: domestic sewage, industrial wastes, mammal and bird wastes, runoff from agricultural lands and cities, pesticides applied from the air or by boats, and others. In a general sense, however, the principal problem is that pollutants add fertility to the water—often even if a plant is operating efficiently otherwise.

These fertilizers, mostly nitrogen and phosphorus, stimulate the growth of algae and other aquatic plants which become nuisances to recreational uses of the lakes. Unfortunately, a continued high rate of nutrient supply is not necessary for continued algal production. After an initial stimulus, the recycling of nutrients within the basin is enough to produce algal blooms for several years.

In short, as the aging process advances, the water becomes enriched and the lake gets shallower from accumulated sediment and organic debris, and anchoring of it by rooted aquatic plants.

Methods have been developed and perfected to produce a temporary reduction and control of excessive production under some circumstances. However, much still remains to be learned. The controls may be either mechanical or chemical, with their uses dependent upon the body of water and the type and extent of control desired. Mechanical controls generally are limited to rooted aquatic vegetation. Chemical controls have been developed for algae, rooted aquatic vegetation, and other nuisance organisms. Every control has limitations. Of course, the most important problem is controlling the basic cause or causes of pollution.

In conclusion, conservationists are agreed that much more work needs to be accomplished toward preventing, removing, and otherwise controlling the pollution of lakes, particularly those which are publicly owned and available to the public. Pilot programs demonstrating how this can be accompished will be of broad general interest and benefit.

Thank you.

(The prepared statement of Louis Clapper follows:)

STATEMENT OF LOUIS S. CLAPPER ON BEHALF OF THE NATIONAL WILDLIFE FEDERATION

Mr. Chairman, I am Louis S. Clapper, Chief of the Division of Conservation Education for the National Wildlife Federation, which has headquarters at 1412 Sixteenth Street, N.W., here in Washington, D.C.

By way of identification, the National Wildlife Federation is a private, nonprofit organization which seeks to attain conservation goals through educational means and methods. The Federation has affiliated independent organization in 49 of the States. These affiliates, in turn, are composed of local groups and indi-