A national inventory (6) of soil and water conservation needs conducted in all states except Alaska and Hawaii during recent years indicated that there are a total of 8,323 watersheds under 250,000 acres in size covering over 1 billion acres of land in need of measures to provide watershed protection and flood abatement. Projects underway as of June 30, 1964, were only 1.68% of those needed. The inventory also revealed that for watershed protection, erosion hazard was still the dominant problem on 234 million acres of cropland and a secondary problem on 59 million acres. Of the non-federal pasture and range land, 364 million acres (72% of total) need conservation treatment and are feasible to treat. Of non-federal forest land, 241 million acres (55% of total) need conservation treatment.

The needs are great and soil scientists can make major contributions in the job to be done.

It has been established public policy for many years to provide public funds for technical and financial assistance in the protection of watersheds, abatement of floods, and diminution of sediment damage. Public Law 83-566 (as amended), the Watershed Protection and Flood Prevention Act, may serve to illustrate the general objectives of such public policy. This Act reads:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That erosion, floodwater, and sediment damages in the rivers and streams of the United States, causing damage to property, constitute a menace to the national welfare; and that it is the sense of Congress that the Federal Government should cooperate with States and their political subdivisions, soil or water conservation districts, flood prevention districts and other local public agencies for the purpose of preventing such damages and of furthering the conservation, utilization, and disposal of water and of conserving and protecting the Nation's land and water resources."

It is pertinent to record that installation of a watershed program is contingent upon a requirement that conservation measures are established on at least 50% of the lands situated in the drainage area above each water detention structure.

In the development of watershed protection and flood abatement projects, soil scientists should be concerned with (i) improved criteria for determination of flood damage towards better evaluation of benefits that can be derived from flood abatement; (ii) better watershed protection through improved soil conservation practices that are amenable to the soils existing in a watershed, prevailing climate, cropping patterns, and highly mechanized farming operations; (iii) improved knowledge of the hydrologic properties of soils essential in the development of reliable design hydrographs of water detention structures; (iv) better understanding of the engineering properties of soils (unconsolidated earth materials) used in the construction of dams and other water control structures; and (v) greatly enhanced knowledge of soils to hydraulic forces towards improving channel