A nation-wide water quality monitoring network was operated from 1957 to 1968 by a central Federal laboratory in Cincinnati. The network was decentralized in 1968, and the responsibility for its operation was transferred to the regional offices of the Federal Water Quality Administration. Following the creation of the Environmental Protection Agency, an Office of Monitoring was established to provide overall technical coordination of the monitoring program and to standardize methodology and maintain quality control of the data. The responsibility for water quality monitoring in the EPA will be shared by the Office of Monitoring, Office of Air and Water Programs, Office of Enforcement and General Counsel, and Office of Research. Four types of monitoring have been identified—ambient trend monitoring, source monitoring, case preparation monitoring, and research monitoring. The water quality monitoring network of the EPA will consist of 5000 to 10,000 EPA-funded stations and 40,000 to 50,000 stations operated by state and local agencies. The data will be stored in a central EPA computerized system called STORET. The responsibility for quality control and the development, validation and standardization of chemical, microbiological, and biological methodology for water and waste water has been assigned to the Analytical Quality Control Laboratory (AQCL) in Cincinnati.

Water quality is reflected in the species composition and diversity, population density and physiological condition of indigenous communities of aquatic organisms. Biological methodology employed in water quality monitoring in the EPA deals primarily with sample collection, sample processing, counting and identification of aquatic organisms, biomass measurements, measurement of bioaccumulation and biomagnification of pollutants, and biological data processing and interpretation. The AQCL conducts research in all areas of biological methodology for water quality monitoring, develops reference samples for quality control, and conducts agency-wide interlaboratory methods studies. An Agency biological methods manual is in preparation and will be available in 1973.

Keywords:
water pollution, environmental surveys, biomass, marine microorganisms, biological methods, plankton, periphyton, macrophyton, macroinvertebrates, fishes, bioassay, water quality monitoring

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Statistics on Aquatic Biological Resources – Session 3. Sachiko TSUJI (FIPS, FAO). WS on Environmental Statistics. Contents: Theory of natural resource management; Characteristics of Aquatic biological resources – issues; Ecosystem approach of fishery and aquaculture management Current status of data availability; Link with “fish resources” in SEEAs; List of information sources; WS on Environmental Statistics. Dynamics of natural biological resource: Increase: Recruitment (R): Increase in number Growth (G) : Increase in biomass. Aquatic Biomonitoring is important in monitoring marine life and their ecosystems. Monitoring aquatic life can also be beneficial in understanding land ecosystems as well.[6] Before there were tetrapods, there were fish. These fish then evolved into tetrapods that we see today. Because of this, aquatic life still has a major impact on life on land. Aquatic biomonitoring can represent the overall health and status of the environment, detect different environmental trends and how different stressors will affect those trends, and interpret the affect of different environmental activity will have Monitoring of aquatic environments requires obtained information in real time, long before the appearance of visible signs of pollution, far exceeding the norms of maximum permissible concentrations (MPC). In recent years, organisms, which have high sensitivity to adverse factors, are widely studied as bio-indicators for water monitoring. Stable operation of biological sensors is determined by the constancy of composition and concentration of micro-algae cells, as well as the stability of their internal state, which depends on the chemical composition of the environment, temperature, illumination, salinity. Under real-life conditions (in situ), the current changes in environmental parameters can lead to significant measurement errors.