

chemical mechanisms of fixation and physiological processes associated with the reaction. The subcommittee believes that a study of these specific problems will ultimately lead to a more general treatment of broader problems.

Conservation of Ecosystems (CE)

This subcommittee is concerned with freshwater and marine conservation as well as terrestrial, and will help to provide the scientific basis for the preservation of natural and research areas. The program includes: (1) establishment of criteria by which ecosystems can be described and classified; (2) registry of areas now available for research; (3) selection of types of areas still needed to complete a system of research reserves representative of American ecosystems; (4) identification of types of ecosystems and species threatened by destruction; (5) ecological surveys of American sites for concentrated multidisciplinary studies; (6) provision of scientific data in support of the preservation of natural research areas.

Productivity of Freshwater Communities (PF)

In collaboration with Productivity of Terrestrial Communities (PT), efforts will be concentrated on a selected stream and a selected lake and their drainage basins. Areas of research will include: (1) detailed analysis of aquatic and terrestrial communities; (2) soil and geological descriptions; (3) transfer of material from air, soil, and bedrock to water and the reverse; (4) nutrient cycling; (5) role of organic substances, as in eutrophication; (6) population dynamics at all trophic levels; (7) role of bacteria in trophic dynamics and decomposition; (8) energetics of the ecosystems; (9) migration of organisms; (10) computer analysis and synthesis of biotic and other variables. Other general objectives include studies of eutrophication, primary and secondary production, fish production, the chemical environment, production in man-made lakes, and production under extreme environmental conditions.

Productivity of Marine Communities (PM)

Because studies of the open ocean are already included in other international programs and because man's influence is most marked on estuaries and inshore waters, this program will emphasize the latter. The approach will include: (1) ecosystem analysis as a central problem involving hydrology, solar radiation, nutrients, dissolved and particulate organic matter, phytoplankton pigments, rate of photosynthesis, and the abundance and biogeography of benthos, phytoplankton, zooplankton, and fishes; (2) human food resources; (3) natural and artificial modifications of the environment; (4) distribution and abundance of organisms; (5) development of better understanding of basic ecological mechanisms.

Human Adaptability (HA)

The goals of this subcommittee are to measure the distribution and identify the sources of variability of man's adaptive capacity and to elucidate the processes of adaption. In fulfilling these goals, the subcommittee will undertake studies on a variety of human populations ranging from hunting and gathering groups to industrialized societies which exhibit significant contrasts in genetic background, habitat, and culture. Special attention will be given to the biological adaptation of isolated and migrant groups. The emphasis will be on population dynamics, human genetics, adaptation to stress, and morphology, growth, and aging. In studying adaptations, the subcommittee is especially concerned with (a) fecundity and fertility, (b) adaptation to undernutrition, and (c) adaptation to disease.

Use and Management of Biological Resources (UM)

This subcommittee will emphasize: (1) development of plant gene pools of important groups—especially tropical groups, including rubber, pulses, cocoa, and coffee; (2) use of blood lines as means of identifying and locating potentially useful genetic material for different animal species; (3) biological control; (4) nutrition, with emphasis on protein supply, fatty acids, nutrient-intake levels, establishment of norms, food resources correlated with human needs, means of food preservation, and the incidence of human disease and parasitism as related to nutrition; (5) relation of total biological resources to human nutrition for various countries; (6) growth and ecology of cereals; (7) little exploited sources of protein, both animal and plant; (8) development of microbiological processes for food production.