SOURCES, TRANSPORT AND EFFECTS OF NITROGEN ENTRY TO THE CHESAPEAKE BAY

Proposers : STAC Nutrient Workgroup

Although a great deal of excellent work has been done to identify the sources, inputs and fluxes of nitrogen in the watershed, most of these have been directed at particular classes of inputs such as point, non-point or atmospheric sources. No authoritative review of the overall picture to evaluate the relative importance of the various sources and to bring them into perspective is however available and there remain, a number of outstanding questions on the relative importance of its various sources, and about the roles of terrestrial, atmospheric and aquatic systems in its transport and distribution throughout the watershed. Some of these questions are identified the report of a 1996 STAC Task Group[1] that examined the importance of atmospheric inputs.

In the light of the management and research planning needs of the Bay Program for the 21st century the time is now ripe for a major workshop to provide an overall survey and comprehensive analysis of e our knowledge of the sources, transport and effects of various forms of nitrogen in the watershed and the Bay.

Subject and Approach:

To address this questions we propose a two-and-a-half or three day workshop with 100 - 150 participants to be held in the summer or early fall of 2000. The topics to be addressed will include:

A survey of the nitrogen sources in the watershed, including fertilizers, animal and urban wastes and atmospheric deposition including surveys of the chemistry of the nitrogen balances in soils, including fixation by agricultural crops and non-agricultural plants.

A review of the hydrologic and atmospheric pathways by which nitrogen is delivered to the Bay, including release and redeposition of ammonia from fertilizer applications and animal wastes, transport and losses in surface runoff and groundwater, retention in forest lands and the impact of city and suburban sources on water quality in subwatersheds and the Bay itself.

Reviews of the role of nitrogen in controlling the ecology and water quality in the Bay itself, nitrogen transformations in the Bay and how these and their ecological effects are influenced by the inputs from the atmosphere and the watershed.

A survey of current Nutrient Management Systems for control of nitrogen inputs and losses from agricultural, forest and urban sources and projections for future improvements including the economic aspects of nitrogen management and control.

Structure

The workshop will consist of a series of invited technical and scientific presentations on the various topics given by authoritative scientists and managers, together with ample opportunity for discussion and audience input.

Product

The product will be a comprehensive report entitled “Sources and Transport of Nitrogen in the Chesapeake Watershed” published by the STAC as a technical monograph as a publication by a scientific publishing house outside the Bay Program channels following the pattern of the STAC-CRC workshop “Agricultural Phosphorus in the Chesapeake Bay Watershed” held in April 1998 at State College, PA.

Budget

Operating Expenseses (including registration fees)	$10,000
Publication costs	5,000
Total	$15,000

[1] “Ascertaining Sources of Nitrogen Entry to the Chesapeake Bay with Emphasis on Atmospheric Inputs”: STAC Report to the Implementation Committee, 19 December, 1996.