Watersheds and estuarine living resources: Water quality attainment as a reference point in ecosystem-based fisheries management

A Scoping Paper from the Fisheries Ecosystem Workgroup
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The Chesapeake Bay Executive Order embeds fisheries management within the Chesapeake Bay Program through implementation of a Sustainable Fisheries Goal Implementation Team. The Chesapeake Bay Program retains its strong focus on restoring water quality "to conditions that support living resources and protect human health." Despite this renewed agenda on living resources, there remain no assessment or decision support tools to relate actions in water quality management to effective fisheries management. The Chesapeake Bay Program has developed rigorous water quality criteria based upon physiological and survival responses for dozens of species, yet this assessment framework is not being used to understand the issue of foregone production of fished stocks. This is particularly true in shallow water habitats and tidal creeks that support productive spawning, nursery and foraging habitats throughout the Chesapeake Bay, which are particularly sensitive to upstream watershed conditions. Information, models, and assessment tools now exist or are underway, but agency leadership and cooperation is needed to integrate these approaches into indicators, reference points, and decision support tools. The Sustainable Fisheries GIT can act to promote progress in the following ways:

1. Communicate with the Management Board and the Water Quality GIT that intensive water quality monitoring and assessment in tidal creek and shallow water regions of the Chesapeake Bay is most critical to improved fisheries production for oysters, blue crab, striped bass, menhaden, and other key living resources. Continue to support development of indicators related to the impact of impervious surface on water quality and living resources in tidal creeks.
2. Urge agency partners to refine and adopt habitat suitability models that can link water quality to fisheries production. Such models should be scientifically reviewed and accepted.
3. Charge the Fisheries Ecosystem Working Group to develop indicators, reference points related to foregone fisheries production due to poor water quality conditions.