

Staff Office is requesting nominations to add expertise to the Science Advisory Board's Ecological Processes and Effects Committee to form a Panel on Suspended and Bedded Sediments (SABS). The EPA Office of Water is preparing a strategy for developing water quality criteria guidance for SABS, which will examine and evaluate the most promising scientific approaches for doing this. The Panel on Suspended and Bedded Sediments will provide a consultation on the Strategy, reporting through the EPA Science Advisory Board to the Agency.

The SAB was established by 42 U.S.C. 4365 to provide independent scientific and technical advice, consultation, and recommendations to the EPA Administrator on the technical basis for Agency positions and regulations. The SAB Staff Office provides technical and administrative support to the SAB in conducting its mission.

The project the Panel on Suspended and Bedded Sediments will undertake is expected to be a one-day consultation. Over that period, the Panel will comply with the provisions of FACA and all appropriate SAB procedural policies, including the SAB process for panel formation described in the "Overview of the Panel Formation Process at the Environmental Protection Agency Science Advisory Board," which can be found on the SAB's Web site at: <http://www.epa.gov/sab/pdf/ec02010.pdf>. Those selected to serve on the Panel will review the draft materials identified in this notice and respond to the charge questions provided below.

Background

Water Quality Standards: States, and Tribes with authorization to conduct a water quality standards program, are required by section 303(c) of the Clean Water Act (CWA) to adopt water quality standards. Such water quality standards must protect public health and welfare, protect designated uses, enhance the quality of water and serve the purposes of the CWA. Water quality standards consist of a designated use(s) for a water body, water quality criteria to protect the designated use(s), and an antidegradation policy. Section 101(a) of the CWA specifies that water quality standards should provide, wherever attainable, "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water." Section 303(c) states that water quality standards should be established for water bodies taking into consideration their use and value for public water supplies; propagation of fish and wildlife, recreational,

agricultural, industrial, navigation, and other purposes.

EPA, under section 304(a) of the CWA periodically publishes water quality criteria guidance for use by States and Tribes in setting water quality standards. This guidance typically contains recommended water quality criteria values or criteria development methodologies. Water quality criteria are levels of individual pollutants or water quality characteristics, or descriptions of conditions of a water body that, if met, will generally protect the designated use(s). Water quality criteria published pursuant to section 304(a) of the CWA are based solely on data and scientific judgements on the relationship between pollutant concentrations and environmental and human health effects and do not reflect consideration of economic impacts or the technological feasibility of meeting the chemical concentrations in ambient water.

States and Tribes may adopt EPA's recommended criteria into their water quality standards or they may adopt water quality criteria modified to reflect site-specific conditions, or criteria derived using other scientifically defensible methods. These criteria recommendations have been critical tools for the States, Tribes, and EPA to control most forms of pollution and improve water quality across the Nation.

Within recent years, however, the States and EPA have identified new issues that are causing significant water quality problems for which water quality criteria have yet to be published or updated. One such concern is the imbalance of suspended solids and bedded sediments (SABS) in water bodies. In many water bodies, SABS are severely out of balance due to human activities within the watershed. In most cases the problem is excessive sediments, but in some cases the problem is too little sediment.

Suspended and Bedded Sediments (SABS): Suspended and bedded sediments are defined by EPA as particulate organic and inorganic matter that suspend in or are carried by the water, and/or accumulate in a loose, unconsolidated form on the bottom of natural water bodies. This includes clean sediment, suspended sediment concentration (SSC), total suspended solids (TSS), bedload, turbidity, or in more common terms, dirt, soils or eroded materials.

In excessive amounts, SABS constitute a major ecosystem stressor. According to the National Water Quality Inventory—2000 Report, excessive sediment was the leading cause of impairment of the Nation's waters. The

highest frequency of impairment was reported for rivers and streams, followed by lakes, reservoirs, ponds, and estuaries.

SABS can impair surface water designated uses in various ways. Excessive sediment deposits can severely impact aquatic-life uses by choking spawning gravels, depleting food sources for fish, filling rearing pools, and reducing beneficial habitat structure in stream channels. Sediments can impair aesthetic uses and can cause taste, odor, and other problems in drinking water supplies. Excessive sediment can block water-supply intakes and disturb treatment systems. Excessive turbidity can make swimming and other recreational uses of waters dangerous or undesirable. Turbidity can also block light transmission to the subsurface and disrupt the growth of submerged aquatic vegetation. Insufficient sediment supply can cause impairments to aquatic life uses by resulting in stream channel scour and destruction of habitat.

SABS present a water-quality problem different from that of manmade toxic compounds and similar to that of nutrients, as they naturally occur in water bodies, and in natural or background amounts, they are essential to the ecological function of a water body. These functions include transporting nutrients and replenishing sediment bedloads that create valuable micro-habitats, such as pools and sand bars. Thus, a basic premise for managing suspended and bedded sediments in water bodies to protect aquatic-life uses may be the need to maintain natural levels of SABS in water bodies.

There are also other types of designated uses of water bodies, other than aquatic life, which need to be protected from SABS. These include recreation in and on the water, shipping, drinking water sources, industrial water use and agricultural water use. The premise that SABS levels should be maintained at natural levels may not necessarily be valid for these types of uses. However, water bodies may have multiple use designations including aquatic life as well as those other uses listed above.

Water Quality Criteria for SABS: In 1976, EPA issued a water quality criteria recommendation for solids and turbidity that uses a 10% reduction of the depth of the compensation point for photosynthetic activity. For a variety of reasons, this criterion is seldom, if ever, used by the States. It is questionable whether this criterion would achieve intended protection for all different designated uses for water bodies.