

# **Charter for Sediment Acoustic Leadership Team U.S. Geological Survey, Observing Systems Division**

## **Introduction**

Methods are rapidly advancing to estimate sediment characteristics in aquatic systems using acoustic metrics. The advantages of hydroacoustic metrics as surrogates of suspended sediment include greater accuracy due to high temporal resolution, a large sample volume, environmental robustness, a technology that is now ubiquitous in streamflow monitoring, and simultaneous velocity measurement. In tested fluvial, estuarine, and marine systems, this approach is effective for continuous monitoring of suspended-sediment concentrations. It also may be effective for estimating particle-size categories, bedload transport, and bed-material composition. In 2013 when the Office of Surface Water (OSW) formed the Sediment Acoustic Leadership Team (SALT), best methods had not been determined for measuring acoustic attenuation and adjusted backscatter amplitude and for computing suspended sediment concentration and other sediment characteristics.

In 2018, the Observing Systems Division (OSD) now oversees sediment monitoring and recognizes the need for continued sediment acoustic research along with providing training, to developing new standardized techniques and practices, and providing ongoing technical support for currently published techniques and practices. In order to provide assistance to meet these needs, the Sediment Acoustic Leadership Team (SALT) is supported by the OSD to develop technical guidance and training for using acoustic metrics to monitor aquatic sediment. The SALT purpose, member composition, tenure, functions, authorities, and duties are described in this document. The SALT is patterned after, and will operate with consultation from the OSD Hydroacoustics Workgroup (HaWG), and will closely coordinate with other USGS, Federal, State, and local agencies that collect sediment and water quality data.

## **Purpose**

The SALT provides assistance and guidance to the OSD regarding all aspects of the development and use of hydroacoustic instrumentation for monitoring characteristics of aquatic sediment, with a focus on fluvial environments. The purposes of the SALT are to:

- Provide a focal point for research and monitoring aquatic sediment using hydroacoustics.
- Assist in the development and application of new methods;
- Provide advice and direction regarding
  - o technical issues,
  - o instrument development needs,
  - o ancillary tool needs,
  - o testing, and
  - o training;
- Provide advice on work and funding priorities;
- Serve as a developing and reviewing body for draft policies, reports, and similar documents; and
- Facilitate communication within USGS among OSD, other WMA branches and committees, and NWIS on subjects relevant to sediment monitoring using acoustics
- Facilitate collaboration among the USGS, Sediment-Acoustic users, other federal agencies, the research community, and vendors.

### **Responsibilities**

In order for the SALT to accomplish its purpose, SALT members are expected to:

- Participate in conference calls;
- Participate in and address questions on the SALT Forum and via email;
- Identify, review, prioritize, and participate in developing the essential research and methods development needed to provide generalized guidance for methods;
- Report to OSD on progress, issues, and their relative importance;
- Review and recommend specific training on sediment hydroacoustics;
- Plan, prepare, conduct, and evaluate user training as needed and funded;
- Organize and conduct sediment hydroacoustic presentations at conferences and meetings;
- Encourage use of sediment-hydroacoustic technology where appropriate;
- Assist in the preparation and review draft policy and procedure memoranda;
- Recommend technology or methods-development investments to OSD;
- Communicate and coordinate with the HaWG and other user groups; and
- Provide an interface among users, HaWG, and OSD;

All members of the SALT are encouraged to communicate with the OSD Chief and/or OSD-supported SALT and HaWG members regarding accomplishments and concerns in the area of sediment hydroacoustics within the USGS. Also, SALT members are

encouraged to facilitate communication with other WMA branches and committees as needed.

### **Approach**

The SALT will hold regularly scheduled (at least quarterly) conference calls to discuss items of interest, review progress on various tasks, and discuss current and proposed policy related to sediment acoustics. In-person meetings may be held, funding permitting. Ideally, one face-to-face meeting will be held every 18 months either as a separate gathering or in conjunction with a workshop or conference. The SALT will attempt to reach decisions by consensus; when consensus is not possible, a simple majority will suffice (see HaWG text on advisory role...decision on recommendation).

### **Composition**

SALT members represent those active in developing, using, and/or guiding acoustic sediment surrogate instrumentation and methods. Membership should represent a cross section of experts from USGS disciplines, other federal agencies, and other members as invited. Participation on the SALT is voluntary. Members may be added to the group, if the OSD believes their participation is beneficial to the group, regardless of their location or affiliation. Nominations, including self-nominations are welcomed. Total membership should not exceed 12, including members supported by the OSD. The HaWG should have at least one representative on the SALT.

Membership terms for all SALT members except those supported by the OSD shall be for a period of five years, but may be extended upon agreement between the member and the OSD. Membership may be extended at the discretion of the OSD when such extension serves the needs of the SALT.

### **Leadership**

The Chairperson will initially be selected by OSD, and SALT members will select a vice chairperson. The chairpersons may be re-elected as long as they are members of the SALT. It is suggested that at least one non-OSD person should be chair/co-chair.

### **Chairperson Duties**

The Chairperson gets input and feedback from the SALT regarding topics of interests and establishes an agenda prior to each meeting. The Chairperson facilitates the meeting and leads the SALT through each of the agenda items.

### **Minutes**

The Chairperson shall make sure that someone at the meeting or on the conference call records minutes with special emphasis on recording decisions and action items. The minutes, including decisions and action items, should be sent to the SALT members for approval and shared with the HaWG chair and OSD Chief after approval.

### **Facilitator**

In the event that the chairpersons cannot attend a scheduled meeting or conference call, the Chairperson shall appoint another SALT member to serve as facilitator for that meeting. SALT activities and minutes will be available on the OSD or FISP public webpage.

### **Authority and funding**

The SALT is sponsored by and reports to the OSD. SALT participation is voluntary and no salary is expected to be funded by the OSD, except where a specific and significant task has been assigned and agreed to by a member of the SALT. For example, funding may be provided for specific tasks such as the development of training classes and materials, and for writing and publication of key guidance or policy documents.