
SAMPLING EQUIPMENT 8.3

Equipment used to collect and process bottom-material samples is described below. Field personnel must understand the limitations of the equipment selected, decide which equipment will give the best results for the procedures selected, and be thoroughly familiar with equipment operation before starting field work. The decontamination and storage procedures for sampling equipment described in 8.3.2 are necessary to prevent contamination of samples.

EQUIPMENT SELECTION 8.3.1

Equipment selected must meet data-collection objectives. Be aware that no bottom-material sampling equipment is appropriate for every objective and environmental setting. Most bottom-material samplers were designed primarily for the collection of bottom-material samples for benthic-invertebrate or particle-size analysis and generally are not adequate for collecting undisturbed samples for chemical and mineralogical analysis. Most bottom-material samplers are particularly unsuited for collecting samples from the critical water-sediment interface. Characteristics of the more common bottom-material samplers are listed in table 8-2. Additional information on bottom-material samplers and sampling equipment is provided in Sly (1969), U.S. Geological Survey (1978), Plumb (1981), Edwards and Glysson (1988), Norris (1988), Ward and Harr (1990), Horowitz (1991), Mudroch and MacKnight (1994), and Mudroch and Azcue (1995).

When selecting bottom-material sampling equipment, consider:

- ▶ Safety of the field team—Safety always takes precedence.
- ▶ Sampling platform and (or) access to sampling site (boat, ship, float plane, helicopter, ice, bridge, scuba, wading, cableway).
- ▶ Physical character of cross-sectional area (such as size, velocity, slope, bathymetry, and sampling area depth).
- ▶ Physical character of bottom material (such as particle size, organic content, degree of consolidation).