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Abstract

The TFW Monitoring Program method manual for the Salmonid Spawning Gravel Scour Survey provides a standard method for assessing and monitoring changes in the depth, frequency and distribution of scour on a stream segment scale. Segments for monitoring scour are selected on the basis of one of three monitoring objectives. Information on frequency and depth of scour is useful when there is a need to evaluate the effect of scour on salmonid incubation, such as in the case of sensitive or declining stocks. It is also useful for evaluating the response of stream channels to changes in peak flow discharge, sediment input, or large woody debris loading due to land-use activities or natural events.

Once objectives are identified and segments have been selected, the spawning gravel is inventoried and categorized by spawning habitat type. Then cross sections are established in a sub-sample of randomly selected spawning gravel areas representing each habitat type. Scour monitors are inserted in potential spawning gravel along each cross section, bed elevations are surveyed and substrate particle size is documented with a pebble count. Data on depth of scour, changes in bed elevation, and substrate particle size are collected after each storm event during the monitoring period. Peak flow discharge is documented. Scour data are analyzed in the TFW Monitoring database, which generates reports that characterize the depth, frequency and distribution of scour by cross section and spawning habitat type. Scour data are interpreted in the context of peak discharge events.

The remainder of section 1 describes the purpose of the Scour Survey, reviews scientific background information, and describes the cooperator services provided by the TFW Monitoring Program. The following sections are presented in order of survey application including: study design, pre-survey preparation, survey method, post-survey documentation, data management, and references. An extensive appendixes includes: copy masters of field forms; examples of completed field forms; scour monitor and inserter size and construction detail instructions; a sample size calculation matrix; a sample site selection worksheet example; a standard field and vehicle gear checklist; and a data management example.

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Copying of the TFW Manual

All TFW Monitoring Program method manuals are public documents. No permission is required to copy any part. The only requirement is that they be properly cited. Copies of the method manuals are available from the TFW Monitoring Program or the Washington Dept. of Natural Resources (see Abstract page for contact information).

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