PART VII. PROJECT IMPLEMENTATION

When critical habitat has been determined to be lacking, placement of suitable structures or other remedial actions may be appropriate. If structural options are selected, some essential physical parameters must be considered. Project location and access, available structural materials, stream-flow volume and velocity, stream channel and bank stability, and bedload and debris transport are basic parameters that must be incorporated into any design plan before an instream structure is installed. Hydraulic cross-sectional analysis should always be performed to assure passage of bankfull flows.

Kinetic energy of a stream determines its ability to move materials. Maximum kinetic energy is generated during bankfull flow, usually related to storms. Bankfull flows may also occur because of released storage in regulated streams. It is during these bankfull flow events that maximum bedload transport and channel formation occurs. As flows subside, deposition and additional stream channel forming processes occur.

Numerous factors including watershed condition, channel configuration, and instream structure regulate bedload transport through a system. Coupling of water energy and bedload places limits on the opportunities for placement of stable fish habitat structures.

SELECTION OF STABLE SITES

Stable habitat restoration sites with appropriate hydrologic and channel characteristics afford the greatest opportunity for successful structure installation. Review of site suitability for project work must incorporate an assessment of natural features of the stream. For example, observation of deposition and scour areas on stream banks will reveal the range of flows in the stream. At each potential structure site, the following factors should be analyzed to determine if a structure will be suitable, stable, and effective.