A Sediment Collector operates on the principle that sediment traveling as bedload can be captured by gravity and removed at the natural rate of transport, instead of episodically

SEDIMENT COLLECTOR

Embedded in the bottom of a river or stream, Sediment Collectors are passive, unobtrusive and virtually undetectable once in place →

Our patented Sediment Collector allows the energy of the stream to selectively capture bedload sediment using simple physical principles. Coarse-grained sediment – fine sands to gravel – migrates as bedload, travels up the Collector's ramp, passes through the grate system and collects within hoppers. Finer sediments – silts & clays – as well as other organic matter remain in suspension and pass over the Collector. As the hoppers fill, the sediment is pumped to a placement or dewatering site for beneficial reclamation of harvested sediments.

Prior to implementing a large-scale system, a pilot project using our Bedload Monitoring Sediment Collector may be done to establish a baseline →

Fountain Creek Case Study

Specific performance data was collected at various flow rates over approximately 500 hours and the peak measured production rate for the 30-ft Sediment Collector was 100 cubic yards per hour. At this rate, if sufficient bedload were available, the single 30-ft collector is capable of removing 876,000 cubic yards per year

Applications

» Monitor bedload transport rates throughout watershed

» Sediment management method to reduce dredging

» Eliminate downstream sediment impacts from bedload transport during construction projects

» Prevent sediment impacts downstream from dam removal projects

» Bi-directional Collector used in tidal applications for beach replenishment

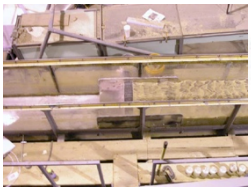
» Collect excess sediment from reservoir tributaries and remove or reintroduce sediment downstream

» Bypass/backpass sand from ocean inlets

» Protect marinas from excess sedimentation

Harvested materials are immediately available for beneficial reuse or to be commercially distributed

SEDIMENT COLLECTOR



Colorado State University

Performance Testing

For material with a median grain size of 0.25mm or greater, the Collector collected up to 99% of total bedload mobilized within the system.

Features & Benefits

» Sediment Collector Systems are scalable for a wide variety of sediment harvesting applications

» Selectively capture and remove targeted harmful or excess bedload sediments

» Capture excess bedload sediment during regular flows or major storm events

» Lower downstream grade to reduce flooding and reduce sediment deposition

» Reduce sediment deposition in navigation channels

» Sediment can be reclaimed, providing an inexpensive source of clean sand

Sediment Collectors represent a new, innovative technology, using simple physical principles to capture targeted sizes of bedload sediment.

Types of Sediment Collector Systems

- Bedload Monitoring Collector – can be used to develop watershed sediment budgets for fine bedload sediments, to establish Total Maximum Daily Loads (TDML) for bedload fines, or to identify source areas by monitoring bedload transport rates through the watershed.
- Contractor Collector – designed to eliminate downstream sediment impacts from bedload transport during in-stream construction projects. It can be used to control bedload sediment from disturbed sites and to prevent impacts to downsteam aquatic habitats or biota.
- Large Scale Sediment Collector – allows the energy of the stream to deliver bedload sediment up the Collectors' ramp and into multiple hoppers. The fluidized sediment is pumped to a dewatering site for beneficial reclamation of harvest sediments and the water is returned to the Collector.
- Forebay Collector – designed to capture sediment that is transported during storm events, thus reducing maintenance on sediment retention ponds and waterways. The Forebay Collector can be placed in areas where excessive bedload sediment is present and causes continual maintenance.

System Controller

The system controller provides electronic control to enable automatic or remote operations, reducing the cost of labor to supervise operation. The system can be set to cycle at specified times, operate off data pulled from a stream gauge station or operated manually.

STREAMSIDE
FOR A CLEANER ENVIRONMENT

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