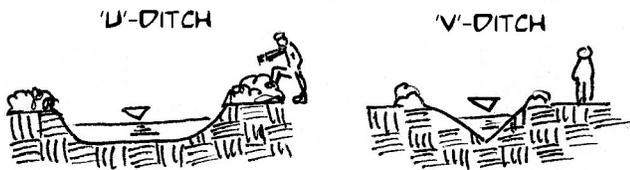


# Sediment Traps

## What they are

A sediment trap is an excavated ditch with an outflow control structure that temporarily impounds irrigation tailwater or stormwater runoff. Sediment traps are located just above the drainage outlet of a farm or field.



## How they work

Most sediment traps use flashboard risers to serve as a dam that delays the flow of runoff water into the nearby ditch or stream. Other designs may use siphon pipes to control outflow.

Temporarily impounding runoff water allows some of the sediment to drop out of the water and settle in the trap.

The sediment can then be excavated and deposited on the field or field roads at the end of the season.

## Benefits

Sediment traps:

- Keep valuable soil and nutrients on your property, rather than losing them with irrigation or stormwater runoff.
- Reduce sediment in runoff water by 30-50% or more.
- Reduce sediment accumulation in on-farm main drain ditches.
- Improve runoff water quality.

## Installation & Cost

The appropriate size for a sediment trap is based on the expected amount of sediment production, which depends on irrigation methods and volumes,

soil type, the acreage and soil slope draining to the trap, and use of other management practices such as cover crops or reduced tillage.

The length of a trap can range from 60 feet to 300 feet.

Sediment traps usually have either a trapezoidal or “U” shaped cross-section, and should be at least 4 -5 times as long as wide. Traps may also be designed as larger, shallower pan ditches.

Many traps can be excavated by a grower, using a backhoe, ‘V’ ditcher or a scraper, and will take a few hours of labor.

Larger traps may require hiring an earthwork contractor with an excavator and can take a couple days of labor.

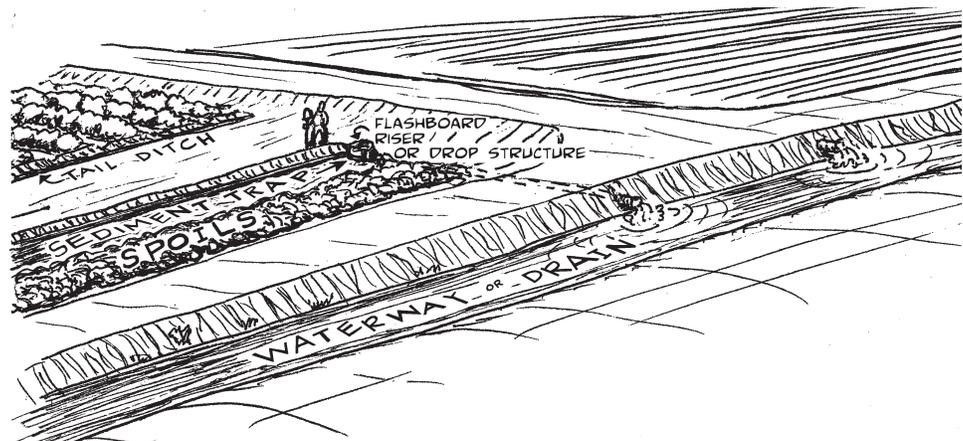
Typical inlet and outlet structures include corrugated metal risers and pipes, or corrugated plastic risers and pipes; and concrete risers with corrugated plastic pipes. Plastic materials are the least expensive, but metal or concrete are more durable. Self-starting siphon pipes can also be used as a flow control structure.

The total costs for installation of a sediment trap will vary depending on the type of flow control structures used and the size of the trap.

If growers excavate the trap on their own, the total costs usually range from \$600 - \$1500, depending on the type of outlet structure used.

For large traps that require hiring an earthwork contractor, costs may range from \$1500 to \$5000. Costs for earthwork were about \$3 per cubic yard of excavated soil (in 2006).

Sediment traps can be constructed in combination with a tailwater pond, so that water flows into the pond after leaving



## Sediment Traps

the trap. This kind of “double pond” system can be used for water storage and water return systems, while providing added benefits for groundwater recharge, wildlife habitat, and biological filtering that improves water quality.

### Maintenance

Once a sediment trap is constructed, it requires seasonal maintenance to excavate the sediment and later to spread it on the field, which can be managed with standard farm equipment.

Sediment traps with a 12 foot width and a gently sloped inlet and outlet ramp can be cleaned with a scraper. Narrower sediment traps need to be cleaned with an excavator or backhoe.

If a sediment trap is designed with the optimal dimensions for a particular site, sediment excavation usually has to be done once or twice a year, when the trap has filled to half of its capacity. Depending on the amount of sediment produced, additional excavation is sometimes needed.

The lifespan of a sediment trap can range from 2 - 20 years.

### Planning and available financial support

Advice on planning, sizing, and constructing sediment traps is available through Yolo County and Solano Resource Conservation Districts and the Natural Resources Conservation Service.

Staff is available to answer questions about installation of flashboard risers, recommended trap capacity, and expected amounts of sediment production given soil characteristics, crop type, field slope, and other factors.

Financial assistance for implementing this practice is available through:

The Yolo-Solano Agricultural Water Quality Management Support Program, which can reimburse costs of materials and time.

The Environmental Quality Incentive Program (EQIP) which provides cost-sharing for private land conservation practices.



*recently installed sediment trap in Yolo County*

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