



## Conservation Practices for Horse Owners

**A conservation practice is any activity that improves, protects or restores a natural resource.**

To implement conservation practices that protects water quality:

1. Identify the source pollution
2. Determine how pollutants reach the water
3. Select a conservation practice, or combinations of practices, to cost effectively reduce the adverse impact to water quality.
4. Monitor and evaluate its effectiveness in achieving the desired result
5. Make any necessary changes based on the evaluation.

**Horse owners should consider the following points to protect water quality:**

### **HORSE WASTE MANAGEMENT**

- 🔊 **Clean up** manure and soiled bedding on a regular basis, especially during wet weather, to limit seepage of salts and nutrients into ground water or runoff of manure into waterbodies.

After clean up, during the arid summer, use a bucket, hose or sprinkler to water areas where horses frequently deposit manure. Watering maintains the moist environment bacteria needed to decompose residue waste.

- 🔊 **Store** horse waste on an impervious surface (a concrete pad or plastic tarp) and under cover (a roof or tarp) during rains to prevent leaching or runoff of contaminants. Locate storage areas away from waterways so that floods or runoff will not wash away waste. Do not dump horse waste on the edge or directly into channels.
- 🔊 **Disposal** fees are expensive. Manure composts into an excellent soil amendment. Perhaps neighbors or local gardeners will want your raw material. Keep compost piles moist and well aerated to aid in conversion of urea and ammonia compounds to more usable, and less toxic nitrates. Be innovative and establish a disposal solution rather than create a disposal problem.

## FACILITY SITING

Keeping horse close to streams, in flood-prone areas, or on steep hillsides increases the potential for the runoff of manure and sediment. One does not always have an ideal site, given the constraints of topography, soil, rainfall patterns or existing structures: but conscientious management can often sit shortcomings. New facilities should be sited and designed to address water quality concerns. Work to upgrade existing facilities.

## STORMWATER RUNOFF MANAGEMENT

- ◆ Keep “clean water clean.” Use grassed ditches, berms, or subsurface drains to divert “clean” runoff around barns, manure storage areas, and paddocks.
- ◆ Install and maintain a system of properly sized roof gutters, downspouts, and drains to prevent “clean” roof water from becoming contaminated” by mixing with barnyard manure and sediment.
- ◆ Divert “contaminated” runoff from manure areas away from waterways and low-gradient vegetated buffer areas.
- ◆ Separate barnyards, paddocks, and manure storage areas from any waterway with buffer strips of vegetation to filter sediments and absorb nutrients in runoff.
- ◆ Construct or repair trails, arenas, roads, parking areas, their associated ditches, and culverts to drain water in a non-erosive manner.
- ◆ Additional benefits of runoff management include a drier barnyard, a healthier horse environment, and better working conditions.

## PASTURE AND PADDOCK CARE

*Vegetation protects water quality by slowing the rate of stormwater runoff, which increases absorption into soil, increases bacteria conversion of toxic or consumptive constituents, and lessens the risk that soil and manure solids will be carried into streams.*

**Grazing Management** - Maintain pasture productivity by controlling the number of horses and the amount of times they spend on a pasture. In most cases, pastures provide an exercise area and not the primary food source. For this reason, pasture management should focus on protecting the pasture’s soil and vegetative cover. Prevent bare areas from forming. Allow grass time for re-growth. Cross fence to divide pastures into smaller area, which can be grazed in rotation. Inexpensive and moveable, electric fencing works well to define grazing areas. During the growing season, graze grass to a height of 3-4 inches and allow re-growth to 6-8 inches before returning horses to the pasture. Manage grazing so that a cover of dry residual vegetation protects soil from the first rains.

**Soil Compaction** – A porous soil improves plant vigor by allowing the infiltration of water, air, and nutrients. Hoof impact and machinery operation on water saturated land compact soil particles and cause loss of porosity.

**Paddocks as a Sacrifice Area** – Use turnout paddocks as “sacrifice areas” to preserve pastures. The strategy reduces churning and compaction of wet soils, and overgrazing when pastures require rest. If possible, locate paddocks back from waterways; and avoid swales where overland flows can wash away bare soil or manure. Maintain a vegetated border around paddocks to help filter contaminants. Be sure paddocks provide horses with adequate exercise room.

## PROTECTION OF WATERBODIES

- **Riparian Buffer Strips** – Protect or restore a vegetated riparian (streamside) corridor with grass, trees, shrubs and/or groundcover to filter sediments and horse waste, stabilize streambanks, reduce solar heating of the water, and enhance aquatic habitat.
- **Limit Horse Access to Waterways** – Provide other sources of water and shade. The direct deposit of manure into water can harm aquatic life. Trampling physically breaks down streambanks and destroys vegetative cover, which can increase sedimentation. The loss of streamside vegetation. May also result in excessive solar heating of the water, which can harm cold water fish. Design stream crossings to minimize erosion. Exclusionary fencing and seasonal grazing of riparian corridors are possible management choices.
- **Protect Small Tributaries** - Ditches and drainage swales carry a large amount of rain runoff. These tributaries also require vegetation to filter sediment and reduce the erosive energy of water. Fencing may be necessary to exclude horses from these smaller waterways.
  - **Wetlands** naturally filter contaminants from water and provide excellent wildlife habitat. Protect wetlands from grazing and trampling during the rainy season.
  - **Chemicals** in horse grooming and health products, detergents, disinfectants, herbicides, and pesticides can harm aquatic life. Follow instructions for correct application. Minimize use whenever possible. Be careful to avoid direct application or airborne transport of sprays to waterbodies. Do not let horse wash water drain directly into waterways.

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The Livestock and Land program is operated through a partnership between Ecology Action and the Resource Conservation Districts of Santa Cruz, San Benito and Monterey Counties. For more information, visit [www.livestockandland.org](http://www.livestockandland.org) or call 831.426.5925 x 132.

