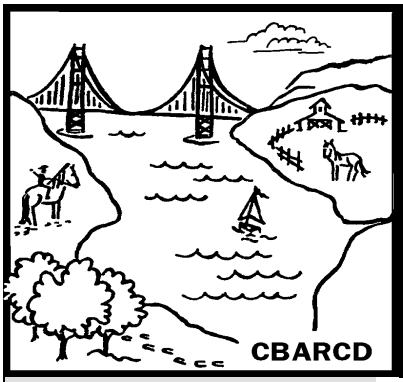

Council of Bay Area Resource Conservation Districts

Equine Facilities Assistance Program

"Working with horse owners to protect San Francisco Bay Area water resources."

Conservation Measures to Reduce Non-point Source Pollution at Horse Facilities

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Participating Resource Conservation Districts

Alameda County RCD
Contra Costa RCD
Marin County RCD
San Mateo County RCD
Southern Sonoma County RCD

Non-point source pollution consists of the diffuse discharge of pollutants that can occur over an extensive area. As water from rainfall, snowmelt, or human activity moves over and through the ground it picks up and transports natural and manmade pollutants, eventually depositing them into surface and ground water.

Water quality: a neutral term that relates to water's chemical, biological and physical characteristics. The quality of water often determines its specific use or its ability to support various beneficial uses.

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Horse owners' responsible management of land and water resources improves horses' health, land productivity, property value, and relationships with neighbors while protecting the environment. Although horse facilities generate a small percentage of the Bay Area's total non-point source water pollutants, their high visibility draws attention. It is important for the horse community to demonstrate good stewardship of our natural resources.

Non-point source pollutants commonly associated with horses are:

- Sediment from soil erosion
- Organic matter, ammonia, nutrients and salts in horse waste (manure, urine and soiled bedding)

The siting of horse facilities near streams, in drainage swales that feed streams, and on steep slopes increases the likelihood of pollutants entering waterways. The basic strategies to prevent non-point source pollution are to:

1. Regularly clean-up and properly store and dispose of horse waste
2. Maintain moist and aerobic (where oxygen is present) conditions in paddocks to break down residual waste, however excessive wetness can cause hoof and disease problems
3. Keep "clean water clean" by diverting rainfall runoff around unvegetated and manured areas
4. Capture and contain "contaminated" rainfall runoff before it enters waterways

Visual observation during a heavy rain will help identify possible pollutant sources and routes of transport. With a little time and training horse owners can self-monitor their operations using simple water quality test kits.

If observations or tests indicate water quality impairment consider implementing one or more of the **conservation measures** outlined on back. Conservation measures do not need to be costly. Often, a slight change in operations will achieve the desired result.

A horse facility should consider the following conservation measures to limit water quality impacts:

Manure Management

1. Collect manure on a regular basis to limit the seepage of salts and nutrients into ground water, or the runoff of manure into waterbodies.
2. Store manure and soiled bedding in a manner that does not allow runoff or leaching from the storage area to affect water quality.
3. Implement an adequate on-site use or off-site disposal system for the waste.
4. During dry months, water,by sprinklers, areas where urine and manure accumulate to assist the aerobic breakdown of ammonium compounds.

Stream Protection

1. Do not allow horses unmanaged access to creeks, wetlands or other biologically sensitive areas. Create alternative sources for drinking water, shade and forage.
2. Preserve, enhance or recreate vegetated riparian zones to filter runoff, stabilize streambanks, reduce solar heating of creek water, and provide aquatic wildlife habitat. Even a zone of grass around waterways will help.
3. Design stream crossings that limit erosion.

Pasture Management

1. Manage pastures to prevent erosion.
2. Cross fence and graze pastures in rotation to allow grass time for regrowth.
3. Control horse trampling and churning of wet pasture.

Stormwater Runoff Management

1. Divert "clean" upslope runoff around corrals, paddocks, arenas, waste storage facilities, and other areas that are likely to contain horse waste or be void of vegetation. Diversion may lead to a concentration of runoff that can cause erosion unless it is adequately planned.
2. Employ a system of gutters, downspouts, and drains to convey "clean" roof runoff away from manured or bare soil areas in a non-erosive manner.
3. Route "contaminated" runoff from paddocks, corrals, arenas, and other areas void of vegetation or where horse waste is likely to accumulate, into a retention pond or an area with sufficient vegetation to filter the flow.
4. Do not allow horse wash water or irrigation runoff to enter directly into waterbodies.
5. Construct roads, parking areas, impervious surfaces, trails, and associated ditches and culverts to drain runoff in a non-erosive manner.

Other Conservation Measures

1. Determine correct application rates of fertilizer or manure to pastures.
2. Implement Integrated Pest Management techniques to reduce the use of pesticides.
3. Take steps to reduce the possibility of the airborne transport of pesticides, herbicides, and fungicides into waterbodies.
4. Plant or construct windbreaks around bare soil areas to reduce wind erosion and to provide shelter for wildlife.

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