

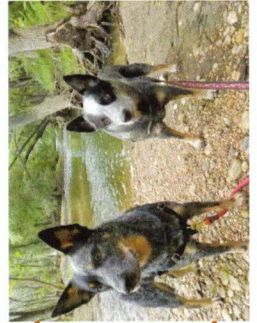
Pet Waste and Water Quality

When pet waste washes into lakes, streams or rivers it adds nutrients to the water that feeds algae. Over time the algae decays and promotes bacterial growth, which consumes oxygen in the water. This process is called eutrophication and it degrades water quality for recreation, wildlife and for our drinking water resources.

Keep pet waste from contaminating our waterways by always picking up after your pets and dispose of their waste in the trash.

To help keep our water clean

- Always pick up after your pet
- Carry disposal bags while walking your dog to pick up and dispose of waste properly.
- Pick up pet waste from your yard.
- Do not leave pet waste on streets, sidewalks, or other impervious (hard) surfaces where it can wash into storm drains, ditches or waterways.
- Communities are encouraged to provide pet waste disposal bags at local parks, along trails and in public places where people frequently walk their dogs.



Pet waste contains nutrients that can cause excessive algae growth in waterways and upset their natural balance

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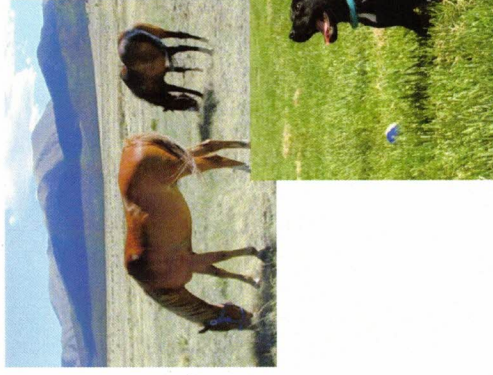
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Management of Manure & Pet Waste



This is an informative flyer to be used as a guide on how you can help to protect Larimer County's waterways. Your everyday behavior impacts water quality in and around Larimer County, but you can take some simple steps to prevent pollution from getting into the storm drains near your property. The water that flows into those storm drains leads directly to our streams, lakes and rivers.

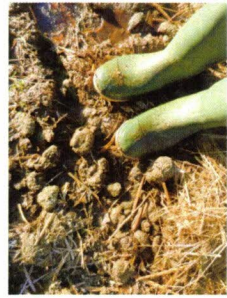
For additional information go to:

<https://www.larimer.gov/engineering/stormwater-drainage/stormwater-quality>



Why Manage Manure?

Constituents of Animal Waste



- Pathogens
- Organic matter
- Heavy metals
- Salts
- Micronutrients
- Potassium
- Phosphorus
- Nitrogen and ammonia

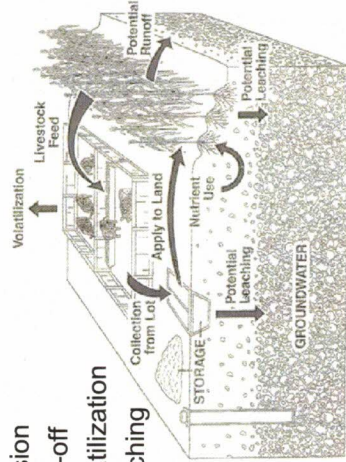
Manure can be a valuable resource but can also be a source of water pollution, odor, flies, parasites, and other nuisances. **If not properly managed, manure can contaminate drinking water, harm wildlife, and reduce property values.**

Mud and manure can cause abscesses, thrush, and other diseases in livestock. Dried manure produces molds that contribute to respiratory problems in horses and cattle. By adopting simple and low cost best management practices (BMPs) for storing, handling, managing and utilizing manure, the environment and health of livestock will benefit.

Nutrient Loss Management

Lost nutrients contribute to water pollution. Manure nutrients are lost via:

- Erosion
- Run-off
- Volatilization
- Leaching



Manure Management Goals:

1. Utilize manure nutrients for enhancing soil.
2. Protect the public and livestock health and safety
3. Prevent surface and groundwater contamination.

Best Management Practices (BMPs)

1. Divert clean water away from manure:
 - Construct berms, terraces or waterways, and/or use downspouts to divert clean water away from corrals and manure storage areas.



2. Ensure manure discharge will not enter a water body or leave the property:

- Limit animal access to ponds, streams, ditches, and wetlands.
- Collect manure frequently.
- Stockpile manure at least 100 feet outside a floodplain or waterway.

To reduce erosion and maintain water quality, water livestock off-stream and manage stream access with fencing

3. Do not stockpile manure in a dry creek bed or ditch.

3. Protect groundwater:

- Locate manure storage piles and livestock corrals at least 150 feet down-gradient from wells.

- Use a 150 foot buffer around wells when land applying manure.

4. Reduce nuisances like flies and odor:

- Stockpile manure downwind from barns and 200 feet away from neighbors.

- Plant trees to divert wind and reduce odor from stockpiles.

- Keep a lid on manure dumpsters.

- Remove manure from corrals and pens every few days to prevent flies, parasites, and worms.

- Cover fresh manure in stockpiles with at least five inches of straw, or hay, to prevent flies.

Disposal Options

1. **Dispose off-site** to a landfill that accepts manure or hire someone to pickup and properly dispose of your manure.
2. **Compost manure.** This requires the right ratio of carbon (bedding or leaves) and nitrogen (manure). Try 30 carbon to 1 nitrogen by volume. Water to keep the pile 50% moist and aerate the pile regularly.
3. **Spread manure.** Spread in spring or fall. Test manure for nutrient content and spread based on soil test recommendations. This will ensure the nutrients are used by vegetation. Unused nutrients can pollute water bodies and groundwater. Remember that raw manure may contain weed seeds, which could establish on the land.

Estimated Horse Manure Application Rates*

- Dryland Range: 1 ton/ac/yr
- Irrigated alfalfa: 5-10 tons/ac/yr

* Test manure for nutrient content and spread based on soil testing



To learn more on Manure Management visit the following web resources:

CSU Extension: [https://sam.extension.colostate.edu/topics/animals/BMPs for Manure Use:](https://sam.extension.colostate.edu/topics/animals/BMPs%20for%20Manure%20Use) <https://extension.colostate.edu/docs/pubs/crops/568A.pdf>

Composting Manure: <https://extension.colostate.edu/docs/pubs/garden/07235.pdf>
Larimer County Stormwater <https://www.larimer.gov/engineering/stormwater-drainage/stormwater-quality/small-acreages-and-livestock>