

Livestock Exhibits

Exhibit 1 -

Resource Evaluation Procedure for Concentrated Livestock Areas

This evaluation guide limits the spectrum of concentration areas to four main scenarios, identifies soil and water quality problems for each scenario, and offers potential alternatives for identified problems. The evaluation guide is applicable to all land uses to which livestock have access.

The criteria for each scenario is presented through a series of “if, then” statements. Each scenario evaluates a given situation for soil erosion and water quality problems. All criteria must be met in order for the scenario to apply to the field situation. If all criteria are not met, move on to the next scenario.

With the exception of Scenario 1, the scenarios below are listed in order of worsening problem.

Scenario 1 – All land uses, permanent concentrated livestock area – CAFO, CAO, AFO – CNMP required

If the operation is a CAFO, CAO, or AFO by definition \Rightarrow *then* a CNMP is required to be developed and signed in order for NRCS assistance to manage manure to continue. Refer to Exhibits 3 and 4 for evaluating concentrated livestock areas and Pastures that are part of AFOs as well as NRCS policy and procedures and respective regulatory requirements providing CNMP assistance.

“A CNMP is required when providing technical or financial assistance to an AFO or CAFO to address manure or wastewater handling and storage/treatment and/ or when providing technical or financial assistance for nutrient management that involves the application of manure and wastewater. Once developed, the CNMP will be signed by the producer before the installation of any waste storage/handling facilities and nutrient management activities identified in the CNMP are initiated.” NRCS General Manual 190_405_B.

If the operation is **not** a CAFO, CAO, or AFO by definition, continue to **Scenarios 2 – 4**.

Scenario 2 – Non AFO Pasture, no permanent concentrated livestock area – access limited to grazing season

The pasture is well managed and covered with desirable vegetation (perennial species) and the only denuded areas are minor in size and are located around watering troughs, gates, mineral supplements, shade areas, etc.

If livestock access to the pasture is limited to the grazing season

AND

If the Pasture Stocking Rate is ≤ 1 AU/Acre*

AND

If plant nutrients are NOT mechanically applied

AND

If the denuded area is dry, shows no visible signs of erosion or poor drainage

AND

If the denuded area is not located within 35 feet of a surface water body source (stream, water way, pond, road ditch, sinkhole, etc.), **-OR-** *If* the denuded area is within 35 feet of stream and is managed with an existing Stream Crossing (574) and stabilized Animal Trail and Walkway (575)

THEN

The pasture can continue to be managed as is \Rightarrow **NO EROSION, SEDIMENT OR NUTRIENT PROBLEMS**. Use the PA NRCS Grazing Job Sheet to determine adequacy of forage supply for grazing.

***Note** – If livestock access to the pasture is limited to the grazing season **but** the Pasture Stocking Rate is >1 AU/Acre, move on to Scenario 3.

Scenario 3 – Non-AFO Pasture, no permanent concentrated livestock area – livestock have year-round access

The area is well managed and covered with desirable vegetation (perennial species) and the only denuded areas are minor in size and located around watering troughs, gates, mineral supplements, shade areas, etc.

1. If livestock have access to the pasture throughout the year

AND/OR

Pasture Stocking Rate is more than 1 AU/Acre

AND/OR

Plant nutrients are mechanically applied

THEN

Evaluate the risk for nutrient problems using the assessment procedures required by Nutrient Management (590)

- - - - - **AND/OR** - - - - -

2. **If** the denuded area is wet, shows signs of erosion or poor drainage

OR

If the denuded area is less than 35 feet from a surface water body source (stream, waterway, pond, road ditch, sinkhole, etc.)

OR

If the denuded area is within 35 feet of stream and is managed with an existing Stream Crossing and stabilized Animal Trail and Walkway

THEN

Alternatives need to be developed to address the problem. Alternatives may include: establish permanent vegetative cover, relocate water troughs or mineral supplement location, stabilize the area around the gate or water trough, build fence and establish a permanent vegetative buffer to exclude the livestock from the area adjacent to the water body.

Scenario 4 – All land uses, poorly or non-vegetated areas on concentrated livestock non AFOs

Use this scenario if evaluating a permanent feeding/loafing/exercise area (ACA/AHUA) on a non AFO.

Use this scenario for all situations not meeting the criteria of the previous scenarios.

The area does not sustain vegetation, forage growth, or post-harvest residues during the normal growing season. (This section includes paved or unpaved areas.)

Complete evaluation of area using **Exhibit 2 – Guidance for In-Field Evaluation of Concentrated Livestock Areas**

Have all desired conditions been met?

YES ⇨ No Problem, STOP

NO ⇨ Problem exists, develop alternatives to solve the problem. Refer to Exhibit 2, Table 1 for some suggested simple management solutions.

Now that alternatives have been developed, is the customer “ready, willing, and able” to resolve the problems identified in Exhibit 2?

YES ⇨ It is unlikely that the customer will run into regulatory compliance issues, **BUT** the area **does not** meet NRCS practice standard requirements. **** Do not** report practices as planned or applied.

YES ⇨ It is unlikely that the customer will run into regulatory compliance issues **AND** the area **does** meet NRCS practice standard requirements. Report applicable practices as planned after conservation plan is agreed to and approved.

NO ⇨ The problems will continue to exist and the customer may be found out of compliance with state and/or federal regulations. The area does not meet NRCS Quality Criteria or NRCS practice standard requirements. Do not report practices as planned or applied. **Advise the customer they may be in violation of one or more state or federal regulations.**



Exhibit 2 - Guidance for In-Field Evaluation of Concentrated Livestock Areas

Concentrated livestock areas (also known as ACAs or AHUAs) are barnyards, feedlots, loafing areas, exercise lots or other similar areas that will not maintain dense vegetation. Concentrated livestock areas can be found on any land use and all must be assessed regardless of their location. Livestock access ways, feeding areas, watering areas, shade areas or walkways are also considered to be concentrated livestock areas when manure or sediment contaminated runoff connects with and reaches a surface water body source (stream, waterway, pond, road ditch, sinkhole, etc.)

Farms with one or more concentrated livestock areas must have written plans that, at minimum, identify conservation practices and/or other Best Management Practices (BMPs) currently implemented to prevent pollution. The written plan must treat identified water quality resource problems. In order to obtain financial assistance, the written plan must include a schedule for implementing needed conservation practices or BMPs.

Concentrated livestock areas must be managed to:

1. Manage concentrated livestock areas to minimize accelerated erosion and sedimentation.
2. Divert clean water flow from upslope areas including fields and pastures, drainage ways, concentrated flow paths, driveways, barn roofs, etc., away from the concentrated livestock area.
3. Direct polluted runoff or allow it to flow from the concentrated livestock area to prevent direct runoff connectivity to sensitive areas (surface water bodies or ground water inlets). Runoff may be directed into a storage facility or BMP such as a correctly sized and well maintained vegetative filter strip.

4. Limit animal access to surface waters to only properly implemented livestock crossings. Animals may not have free access to streams adjacent to or within concentrated livestock areas.
5. Minimize the size of denuded areas.
6. Keep areas where animals concentrate, such as feed racks and shade, as far away from a water body as practical.
7. Where appropriate, include relocation of movable structures that create concentrated livestock areas, such as hay rings, at least annually where practical to minimize development of denuded area and manure concentration.
8. Routinely, generally four times per year, remove accumulated manure from concentrated livestock areas to minimize the potential for pollution discharges.

Table 1 provides guidance for in-field evaluation of concentrated livestock areas and provides simple management and BMP solutions to address problems where the desired condition is not met and practices are not warranted or feasible due to cost, location, or management level.

Table 1- Guidance for In-Field Evaluation of Concentrated Livestock Areas

Desired conditions for concentrated livestock areas are stated in the left column. When the desired condition is not present on site, consider simple BMP alternative solutions provided on the right.	
Desired Condition	Simple BMP Alternative Solutions
Congregation areas at gates are stable, minimal offsite flow thru them	Add stabilizing material. Redirect runoff away from area
Animal trail appropriate width and stabilized	Re-fence if trail too wide. Stabilize with appropriate material
No significant off-site surface water going thru site	Divert offsite water. If necessary install diversion above site
Runoff from buildings is collected and diverted around or piped under site	Install roof gutters and outlet or other methods to keep clean water clean
Site stable, not rutted, no depressions, mud less than 6" deep	Site can be graded and/or bring in fill to establish positive slope
Paved area curbed and runoff directed to storage or a vegetated treatment area	Add curbing or pavement and direct runoff to storage or vegetated treatment area
Feeding areas should have no manure accumulation	Clean up area at least two times a year
Feeding areas located 150' away from streams	Move feeding areas away from stream
Dense vegetation below livestock concentration area is at least 3X upslope length or 150' whichever is greater	Move livestock concentration area up slope
Vegetation below livestock concentration area has 3 inch growth and minimal denuded spots	Livestock access to be limited to avoid overgrazing
Site slope < 8%	Move area to a site that is <8%, 2-5% preferred.
Located outside of natural or constructed drainageway	Move to a flatter location distant from a stream or well or eliminate
No visible gullies on site	Eliminate cause of gully and shorten the length of slope
At least 12" of soil cover over any rock areas	Fence out area that lacks adequate soil cover
Dry site	Fence off wet areas or eliminate livestock concentration area
Any potential runoff flows into a vegetated area or runoff collected and properly stored or treated	Runoff not going into vegetated area eliminated or redirected to filter area or collected and properly stored or treated
Runoff does not concentrate to one or more locations	Grade surface to redistribute runoff uniformly across lower edge
Untreated runoff does not have direct channel to waters of the PA	Redirect or redistribute runoff uniformly across lower edge and establish a filter area below the livestock concentration area
Area is 150' away from any water well, spring, wetlands	Establish a filter area below the livestock concentration area
Livestock access to stream is stable, with narrow access	Fence out stream and allow access only at stable crossing

Exhibit 3 -

CNMP Planning Considerations for Evaluating Concentrated Livestock Areas

(Note: The regulatory term ACA is used in this exhibit adapted from the PA Nutrient Management Program Technical Manual. *An ACA is a concentrated livestock area.*)

In general, the evaluation of the adequacy of ACA practices and conditions should consider the ability of the current practices and management to keep clean water clean and to collect, handle and treat contaminated runoff water before discharging into surface water or groundwater. Following are some factors to consider as part of the evaluation:

Site Characteristics

- Topography in and around the ACA
- Soil type in the ACA
- Soil cover or surfacing of the ACA
- Contributing drainage area up-slope of the ACA
- Roof runoff management
- Down slope of the ACA (impacted or buffered)
- Runoff controls or containment within the ACA
- Practices and facilities used to address runoff

Management and condition of the ACA

- Accumulation of manure on the ACA
- Standing water or muddy conditions
- Gullies or irregular surface
- Stocking rate (ft²/head)

Climatic Conditions

- 25-year, 24-hour storm event.

The following practices and conditions related to each identified ACA or “potential ACA” must be evaluated:

Location and Sizing

ACAs must be located and sized appropriately to minimize the impact on surface water and groundwater. These areas should meet the appropriate criteria set forth in PA Technical Guide Standard 561, “Heavy Use Area Protection,”

Standard 635, “Vegetative Treatment Area,” Standard 393, “Filter Strip,” and others.

Manure Collection

Collection of accumulated manure for land application or export from the operation is required on all ACAs. It must be determined if manure collection is practical and feasible based on the condition of the ACA surface. In addition, it must be determined if the operator has the equipment needed to collect manure from the ACA. Finally, the operator must agree to remove accumulated manure. The frequency of this removal must be described in the planned management of the ACA.

Upslope and Roof Stormwater

Each ACA must be evaluated for evidence of uncontrolled flow of stormwater into or across the area. This is particularly critical of ACAs where there is stormwater runoff from the area. In general, the axiom “Keep Clean Water Clean” applies. This “clean water” includes up-slope and roof runoff water. The intent is to divert clean water away from or around the manure sources. This will minimize the amount of contaminated runoff that must be treated before reaching surface or ground waters.

Contaminated Runoff Water

Each ACA must be evaluated for the existence of direct runoff or discharge of contaminated, inadequately treated water into surface water or groundwater. These conditions, when identified, must be listed as inadequate manure management practices and conditions. When evaluating runoff from these areas, consider the adequacy of storage or treatment facilities, downslope filter areas to control and treat the flow of contaminated runoff water before discharging into surface water or groundwater.

Animal Access To Streams

Animal access to surface water in animal concentration areas must be limited to properly installed stream crossings as needed for livestock and equipment.

(Adapted from PA Nutrient Management Program Technical Manual, June 2011)

Exhibit 4 - P-Index Ratings and Pasture Management Guidance

P-Index Ratings Impacts on Pasture Management		
P-Index Value	P-Index Rating	Pasture Management Guidance
<80	Low to Medium	Nutrients can be applied to meet the Nitrogen crop requirement
80 to <100	High	Nutrients can be applied to meet the phosphorus crop removal
100 or higher	Very High	<ol style="list-style-type: none"> 1. Grazing may not be conducted within 50 feet of a perennial or intermittent stream, a lake or a pond. 2. A prescribed grazing system shall be used to maintain an established stand of forage on the pasture area. 3. The stocking rate shall be limited to ensure that the level of phosphorus deposited by the animals does not exceed the level of phosphorus removal from the soil by vegetation in the pasture. 4. BMPs contained in the Pennsylvania Technical Guide may be used to meet the requirements in paragraphs (1) and (2). Other BMPs shall be approved by the Commission.

P-Index Ratings are sensitive to the condition of the pasture vegetation along the edge of the receiving water. Attention to management in this area can reduce water quality risk, lower the P-Index Rating and provide additional nutrient management flexibility. Pastures within 100' of a stream, lake, pond or sinkhole can use a 35' setback for mechanical manure application and assign a "6" for Contributing Distance in the PA P-Index if the following criteria are met

- Duration, intensity, frequency and season of grazing in fields or CMUs adjacent to a stream, lake, pond or sinkhole will be planned and applied in such a manner that perennial vegetation and water quality are maintained or improved. The animal stocking rate and pasture usage practices called for in the nutrient management plan or associated grazing management plan, along with the restrictions outlined below, will provide this protection
1. Fields with poor, somewhat poor, or very poor drainage characteristics shall have grazing limited on these areas during times of high water table.
 2. Ground cover provided by perennial vegetation shall be maintained at a level of 80% or more to minimize soil erosion and nutrient runoff. Plants identified by PDA as noxious weeds must be eliminated and controlled in these areas. For a listing of noxious weeds refer to Pennsylvania's

Weed Control list (<http://plants.usda.gov/java/noxious?rptType=State&statefips=42>).

3. All animal concentration areas (such as feeding, watering or shade areas) within the pasture shall be addressed in such a manner as to eliminate the direct discharge of runoff from these areas from entering any adjacent waterbodies.
4. Livestock access to the 35 foot buffer area will be managed in such a way as to ensure at least an 80% vegetative cover at all times across the entire buffer area, other than on areas developed as stabilized stream crossings or stabilized watering areas. Maintaining an 80% vegetative cover across the 35-foot area can involve fencing off the 35-foot buffer area, establishing alternate off-stream water sources or watering systems, and/or establishing stabilized stream access for crossings or watering access for livestock. Other alternative management systems, structural practices or management techniques can be used to maintain the necessary 80% minimum vegetative cover throughout the 35 foot buffer area
5. No manure may be mechanically applied within the 35 foot buffer area.
6. Criteria 1 thru 5 must be met and implemented at the time the animals are grazing the pasture.

(Adapted from PA Nutrient Management Program Technical Manual, June 2011)

Exhibit 5 - Size Requirements¹ for Heavy Use Areas by Animal Type and Weight

Dairy Lot – Square Footage per Head			
Animal Weight (lbs.)	250-400 lb	600-800 lb	1000-1400 lb
Paved ² Surface	30-40 SF	40-50 SF	60-75 SF
Unpaved ³ Surface	250-300 SF	350-500 SF	600-700 SF
Beef Lot - Square Footage per Head			
Animal Weight (lbs.)	Cow/calf pair (1200 lb)	600 lb	1000 lb
Paved Surface	60-75 SF	40-50 SF	50-60 SF
Unpaved Surface	400-500 SF	200-250 SF	300-400 SF
Unpaved Surface (no mounds)	550-650 SF	400-500 SF	500-600 SF
Unpaved Surface (with mounds)	20-45 SF	20-45 SF	20-45 SF
Sheep Lot - Square Footage per Head			
Animal Weight (lbs.)	50 -100 lb	100-150 lb	150-200 lb
Paved Surface	10-20 SF	20-30 SF	30-45 SF
Unpaved Surface	50-100 SF	100-125 SF	125-150 SF
Equine Lot - Square Footage per Head⁴			
Animal Weight (lbs.)	Mare/foal pair	400-600 lb	600-1200 lb
Stone Surface	600 SF	300 SF	400 SF
Improved Surface ⁵	600 SF	300 SF	400 SF
Notes:			
<p>1 These size ranges do not supersede practice standard or specification criteria found in FOTG Section IV. The square footage recommendations are not the basis for financial assistance practice payment limitations. Refer to the current year program guidance for payment criteria or program limitations. When sizing Heavy Use Areas allow additional area around:</p> <ul style="list-style-type: none"> • Feed bunks & watering facilities – extend 6 feet from perimeter • Traffic lanes for equipment – if necessary, allow a 10 to 12 foot wide travel path in addition to square footage calculated according to animal numbers/weight. 			
<p>2 “Paved” means any hard surface that does not compress (leave a hoof print) when walked on when dry.</p>			
<p>3 “Unpaved” is everything softer than paved.</p>			
<p>4 A minimum of 1200 SF is required. This area can be increased according to the numbers above when there are more than 2 animals per turnout group. Increase square footage by area listed above for every animal over 2 in the turnout group. It is possible to have multiple turnout groups per area. Equine operations can limit the extent of improved exercise lots by sizing the area based on the largest group and not on the total animal numbers. Groups are rotated thru the area when it is not appropriate to have them on pasture.</p> <p style="text-align: center;">Example – a turnout group of 5 mare/foal pairs 1200 + (3x600) = 3000 SF</p>			
<p>5 Improved surfaces can include shredded bark, shredded tires, earthen with top soil removed, etc.</p>			