Managing Healthy Pastures in Clallam County

What is Pasture Management?

This guide will help you learn how to take care of your pastures so you can grow more feed for your livestock. Think of yourself as a "grass farmer"; your job is to grow grass for your livestock. By developing a plan for your pastures, you can increase the health of your land and your animals.

Benefits of A Well Managed Pasture

- **Lower feed bills, healthier livestock**
- **Fewer weedy plants**
- **Improved aesthetics of your farm**
- **Protection of natural resources such as water quality and soil**

Creating a Pasture Management Plan

1. Identify Goals– What are your goals for your pasture? How many animals can your pasture feed?
2. Inventory & Analysis– How much grass can you expect to grow? Will your pastures provide enough feed for your livestock?
3. Management Actions– What actions do you need to take to have healthy, productive pastures? This handout will explore management practices that you can use to increase the productivity of your pasture while protecting natural resources like water quality.

A good grazing plan keeps your land and your livestock healthy.

Pasture or Exercise Area?

Are your pastures actually providing any valuable feed for your livestock or are they merely an exercise area for your animals? Most livestock owners want their animals to be happy and healthy, and productive pastures can achieve both those goals. Designate an exercise or play area for your livestock. This is oftentimes referred to as a "sacrifice area" or a "sacrifice pasture" because this area is sacrificed for the health of the remaining pastures. Please refer to the ***Constructing a Heavy Use Area*** handout for information on building a mud-free, year round sacrifice area for our livestock.

Pasture Management Basics

Good pasture management requires basic knowledge of the following:

- Climatic data—rainfall, growing seasons
- Soils—limitations, capabilities
- Pasture grasses—identification, basic growth requirements
- Management techniques—rotational grazing, dragging, clipping
- Fertility— nutrient levels and needs
- Weed control— identification and control

Growing more grass for your livestock will lower your annual feed bills. One acre of productive pasture can provide two tons of feed over a growing season!

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Climatic Data

The specific location of your farm will affect the growth and overall management of your pastures. Clallam County rainfall varies significantly with an average of 16 inches on the east end of the county (Sequim area) to over 200 inches in the west end (Forks area). Elevation also influences the amount of rainfall your pastures receive, with higher rainfall occurring at higher elevations. The Conservation District can help you determine the average rainfall that can be expected annually on your farm. In addition to rainfall, your location will also determine the pasture growing season, which is the time of year that pastures are actively growing. Generally speaking, our growing season is typically March—October but this varies depending on your specific location. Typically, pastures higher in elevation have a shorter growing season than pastures lower in elevation.

Soils

The types of grasses you plant and your pasture management techniques should be based on the specific soil type found on your property. Pastures can be established on most soil types in Clallam County, however some soils are more challenging to manage pastures on than others. Soils can be classified as excessively well-drained, well-drained, moderately well-drained, somewhat poorly drained, or poorly drained. Sandy or gravelly soils drain rapidly thus do not hold water. Poorly drained soils are more prone to compaction and ponding, both of which decrease grass plant health. Many farms have more than one type of soil in pastureland. For example, bottomlands tend to be poorly drained and need special care whereas hillsides tend to be droughty, leading to a decrease in grass growth later in the growing season.

The Conservation District can help you determine the type of soil on your farm and how to best manage it.

Pasture Grasses

To best manage pastures it is important to have a basic understanding of how pasture plants grow. Most desirable pasture species are *perennial*, meaning that they persist in a pasture long term by growing during the spring and summer and then become dormant in the fall and winter.

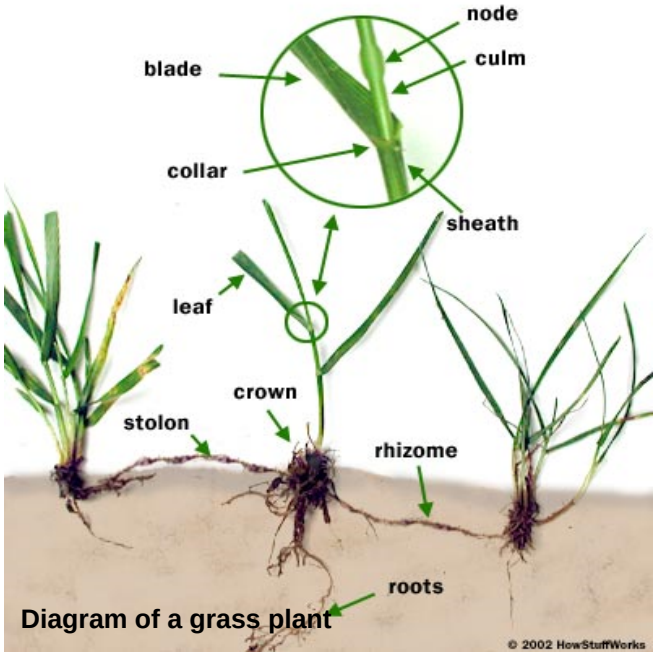
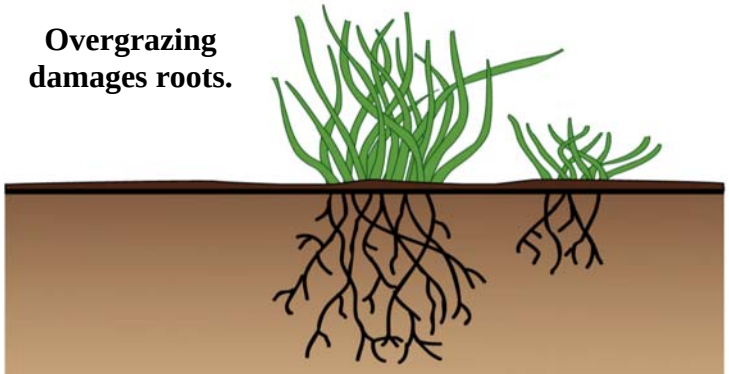


Diagram of a grass plant

Annual grasses persist in a pasture for one growing season, unless they go to seed and re-grow the following year. Well-established roots are important for healthy pastures and contain the energy needed for the plant to grow. Deep, healthy roots readily absorb nutrients and moisture, leading to healthy pasture plants. Grasses store the energy they need to grow (sugars) in the lower part of the plant. Like the leaves on a tree, grass leaves collect energy from sunlight using photosynthesis.

Overgrazing damages roots.



Percent leaf volume removed	Percent root growth stopped
10%	0%
20%	0%
30%	0%
40%	0%
50%	2-4%
60%	50%
70%	78%
80%	100%
90%	100%

PASTURE MANAGEMENT STRATEGIES

Continuous Grazing & Overgrazing

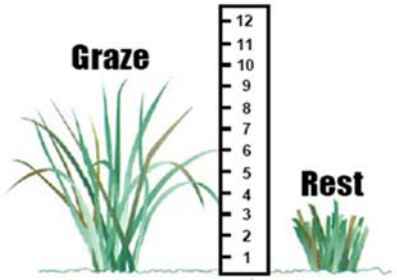
Many livestock owners allow their animals free access to pastures at all times, which is called continuous grazing. Unless your pastures are highly productive and you have relatively few livestock, this is not a recommended practice. When livestock have continuous access to a pasture they typically overgraze the grasses. Overgrazing occurs when there is three inches or less of the grass plant. Over time, overgrazing stunts a grass's ability to grow by dramatically reducing underground root structure and depleting the plant of its energy reserves and ability to photosynthesize. Long-term overgrazing will eventually kill the grass plant, leaving bare soil that is susceptible to weed invasion.

Rotational Grazing

Overgrazing can be minimized through the use of a rotational grazing system. Rotational grazing is simply the process of moving livestock between pastures or paddocks to limit their access to plants. Generally speaking, livestock should be moved onto a pasture when the plants are 6-8 inches tall and removed when the grasses are 3-4 inches tall. An alternative to rotational grazing is **time-limited grazing** in which livestock are only permitted to graze a pasture for a few hours each day to maintain stubble height. This grazing strategy is most commonly practiced with horses.

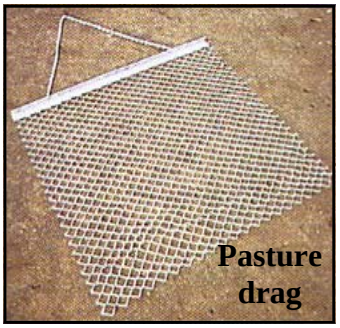
Pasture Tip

Use the "Take Half, Leave Half" rule of thumb– Livestock should be turned onto a pasture when the grass height is 6-8 inches and removed from the pasture when the stubble height is 3-4 inches.



Clipping & Dragging

Periodically mowing or clipping your pastures will promote more uniform grazing by livestock, keep the grass from going to seed, and prevent weeds from going to seed. Clipping can be performed with a tractor or riding lawn mower. If using a riding mower, put the blade deck up as high as possible, there should be at least 3" of stubble height remaining. Many farmers find it helpful to clip a pasture as soon as the livestock are rotated out. This will help control weeds and promote more even re-growth of the pasture.



Dragging your pastures as soon as you rotate out livestock will help promote uniform pasture re-growth and evenly distribute manure. Commercial drags are available for purchase and can be pulled behind a tractor. Drags can also be made from old pieces of chain link fencing, weighted down with T-posts, and can be drug behind a riding mower or ATV.

Fertilizing

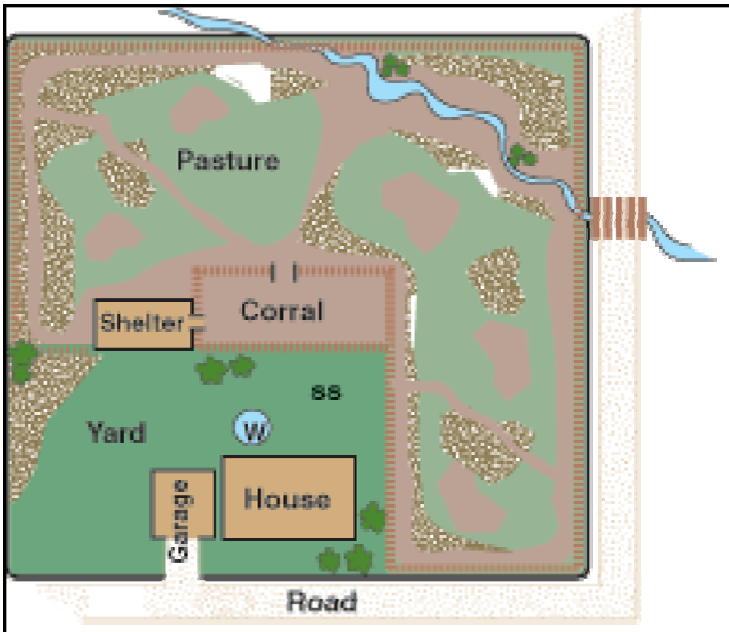
The Conservation District offers a low-cost soil testing program. Call us or check out our website to learn.

Most pastures in Clallam County will require some form of fertilizer. Pastures that are low in fertility typically have high amounts of weeds and moss, bright green patches around manure piles, and short, wispy tufts of grass.

When and how much fertilizer you apply should be based on the results of a soil test. The Conservation District offers a low-cost soil testing service that will provide you with nutrient level conditions and fertilizer recommendations specific for your pasture. If you do not have soil testing information available for your pastures, a general rule of thumb is to apply 60 pounds of phosphorus and potassium and 60 pounds of nitrogen per acre, per year. It is best to split the applications into two, one in the early spring and one in the early fall. In addition to fertility, the acidity of your soil can also affect the health of your pastures. Ideally, a pH of 6.0 is optimum for grass growth but many Clallam County soils are more acidic (lower pH). Applying lime to your pasture will help raise the pH of your soil. Without soil testing data, a good rule of thumb is to apply 1 ton per acre per year of lime.

HEALTHY PASTURES, HEALTHY LIVESTOCK, HEALTHY LAND

The benefits of managing healthy pastures extend to more than just the health of your livestock. Productive, well-managed pastures protect natural resources like water quality and soil. Properly managed pastures will uptake nutrients found in livestock manure and keep them from washing into nearby surface water. If you have gravelly, well-drained soils, it is especially important to properly manage livestock manure piles and pastures to prevent nutrients from manure leaching through well-drained soils and into groundwater (*please refer* ***Managing Horse & Livestock Manure in Clallam County***). Groundwater in areas of Clallam County, like Agnew and Carlsborg, have tested high for nitrates (which comes from nitrogen), and drinking water high in nitrates can lead to serious health concerns, especially for pregnant women and infants. Maintaining a 3-inch stubble height in your pastures will prevent soil erosion and help reduce water pollution.



Before Pasture Management Plan

- One large pasture which is overgrazed and producing at less than half of its potential.
- Weed invasion is more likely due to excessive bare ground.
- Animals are drinking directly from the stream, contributing to erosion and degrading water quality.
- Manure and sediment can enter the stream, there is no vegetation to filter runoff.
- Bare soil will lead to dust in the summer and mud in the winter.
- Little food or cover for wildlife.

After Pasture Management Plan

- Pastures have been divided (cross fenced) into multiple units, allowing for rotational grazing (and more grass!)
- Livestock have been fenced out of the stream and the banks have been replanted with native vegetation to help prevent erosion and protect water quality.
- Livestock no longer drink directly from the stream; water is located in a central location easily accessible from all pastures.
- A corral with mud-free footing is used for winter confinement.
- Trees and shrubs have been planted to create wildlife habitat, windbreaks and screens.

Seasonal Management

The management of your pastures must adjust with the season. Allowing livestock access to pastures during the winter when the grasses are dormant and the soils saturated can dramatically reduce the amount of grass that will grow the following spring. Livestock should not have access to streams, ditches, ponds and wetlands. Please refer to the Seasonal Management Calendar for suggested management activities by season:

Seasonal Management Calendar	
Spring	• **Do not turn livestock out until ground is firm and grass is 6 - 8 inches tall.** • **Rotate livestock between pastures, do not graze below 3 inches.** • **Apply fertilizer as indicated by soil test.** • **Clip pastures at end of grazing period to encourage uniform grass growth and control weeds.** • **Check for & control weeds.**
Summer	• **Continue rotational grazing system, (maintain 3" stubble height). You may need to remove livestock from pastures and feed hay if pastures go dormant.** • **Clip pastures at end of each cycle** • **Spread manure after animals are removed from pasture** • **Check for and control weeds, keep perennial weeds from going to seed.** • **Irrigate pastures, if available.**
Autumn	• **Fertilize as indicated by soil test. *This is the time of year to apply lime.*** • **Animals should be removed from the pasture when minimum stubble height is met or when soils become wet, or by November 1 to allow plants to produce leaf growth for winter.**
Winter	• **Confine livestock to heavy use area, do not allow access to pastures during the winter.** • **Plan out next year's grazing strategy.**

Irrigation

Though most people consider Clallam County rather wet, most of our rains occur during the fall and winter months and not during the growing season. If you do not have access to irrigation water, you will notice a decrease in grass production during mid-summer and production will significantly decrease in late summer and early fall when we experience the driest weather.
If you have access to irrigation water, you can significantly increase your production during the growing season.

Irrigation water should be applied according to an irrigation water management plan. The Conservation District can help you develop an irrigation water management plan for your pasture. The plan evaluates your crop type, soil characteristics, and irrigation application methods. In the absence of an irrigation water management plan, a general rule of thumb is to apply 1-inch of water per week during the growing season (you can measure the amount of water being applied by simply placing a straight-sided can or baking pan in the field while irrigating and then measure water depth after one hour). You should irrigate deep but not too often as frequent irrigation can lead to shallow grass roots. Livestock should not be permitted on the pasture during or directly after irrigation.

Weed Control

Weeds are opportunists and will establish in poorly managed, over-grazed pastures with bare spots and poor grass growth. The best weed control is achieved by managing healthy, productive pastures which reduces bare spots and increases the competitiveness of grasses. Herbicides can be used for serious weed infestation. Broadleaf weeds can be controlled with selective herbicides which may also kill clover. It is generally recommended to spot spray weedy areas rather than broadcast spray an entire pasture. Mechanical control, such as clipping and pulling will also help control some weeds. Poisonous weeds such as Tansy Ragwort should never be allowed to establish in a pasture. Many weed infestations start from weed seeds found in hay. Limiting your hay feeding area to one location on the farm and routinely checking for weed infestations is recommended.

Contact Clallam County Noxious Weed Control Board for at 360-417-2442 for more information.

RESEEDING & RENNOVATING PASTURES

When to Reseed

Reseeding and renovating pastures is costly and time intensive. Before you begin renovating a pasture evaluate the current management of the field. Is reseeding really necessary or could your pastures be improved with a change in management practices or soil fertility? If desirable grass plants are present and the pasture is not heavily infested with weeds, simply changing your management actions should improve the overall production of the pasture.

Reseeding is recommended if a pasture is significantly weedy and desirable pasture grasses are not present. Keep in mind that if you reseed the pasture but continue with current management practices, your pasture will probably revert back to its previous condition, wasting resources and time. Management changes might include reduced stocking rates, limiting the grazing season, cross fencing, and fertilization. A general recommendation is to renovate **no more than 20% of your total pasture area in one year** because livestock are typically not allowed on a newly renovated pasture for several months and other pastures must be available to meet their needs. Also, new pasture seedings sometimes fail because of weather or other unforeseen events.

Reseeding Pastures: Getting Started

1. Start by obtaining a soil test of the pasture to be reseeded. A soil test will determine the nutrient needs to give your new pasture grasses the best possible start. This is especially important if you are seeding land recently converted from forestland. The Conservation District offers a low-cost soil testing program.
2. Select the appropriate forage or grass species for your soil type and planned use. Many seed dealers can provide input on the type of seed that will work best for your pasture.
3. Kill the existing vegetation in the pasture before reseeding. This can be achieved either through the use of chemicals, mechanically (tilling) or a combination of both. Be sure to eradicate weeds in the pasture before planting. Tackling weed problems now will allow for better grass establishment.
4. Ensure that soil is not compacted as a result of heavy equipment or livestock use during the wet months. Tools such as subsoilers or aerators work well to help break up compaction. Use caution not to damage existing drain tiles or other underground pipelines. A properly prepared seedbed should not be fluffy. An easy test to ensure that your seedbed is properly prepared is to walk across the field. You should leave footprints no deeper than a 1/4".
5. Seeding should occur in the spring or fall. Apply the selected seed at the recommended rate per acre (typically pounds of seed per acre). Grass and legume seeds are very small and should not be placed deeper than a 1/4 of an inch. It is better to seed too shallow rather than too deep. Roll or drag the pasture after seeding to provide light cover over the seeds.

Roll or lightly drag after seeding to ensure good seed to soil contact.

6. Once your pasture has been seeded, it is especially important to control any weeds that may emerge. This is best achieved by clipping, especially if the weeds are annuals which typically grow faster (and over the top) of the new grass seedlings. If you have access to irrigation, routinely irrigate the newly planted pasture. Use caution not to over-irrigate a newly seeded pasture as too much water can erode soil and wash away seeds.
7. Do not graze livestock on the pasture until you conduct the "Pull Test." To ensure your grass is ready, grab a single plant and give it a firm tug. If you can rip the plant out with roots intact, the field is not ready for grazing. Be sure to only graze the pasture lightly during the first 90 days after the pasture has passed the "Pull Test" to ensure healthy root development. Field mowing to a 4" stubble height is also beneficial for encouraging good root growth.

For More Information:

The publication ***Pasture & Hayland Renovation for Western Washington & Oregon*** is an excellent resource and is available free of charge at the District office or can be downloaded from:

http://cru.cahe.wsu.edu/CEPublications/eb1870/eb1870.pdf