
Raising Animals on Small Acreage



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Nevada County, California

“BE A PART OF THE SOLUTION, NOT THE PROBLEM”

Historically, Nevada County lands have been used for raising livestock on rangeland and harvesting timber for production from the forestland. Today, many large parcels of land have been sub-divided as more and more people move into the county. Many people come here to enjoy the rural lifestyle, experience the beauty of the countryside and forests, and to raise horses and livestock on their property. Many of the small parcels are less than twenty acres, with many being five acres or less. This intensive use of small acreage has resulted in increased problems of the natural resources and surrounding land.

Problems that can result are erosion, manure and sediment run-off into streams and ponds, soil compaction, overgrown fire hazardous brush, over-grazing and resulting weed development, damaged trees, dusty or muddy areas, fly and insect problems and increased chance of disease by close, intensive uses. You can avoid these problems by careful planning.

This booklet addresses raising horses and livestock on small parcels. The goal is to educate individuals in identifying the natural resources, identifying the needs of the animals and creating good conservation practices on managed properties. This will enhance the beauty of your property and the well being of your animals.

Topics addressed in this booklet:

- Inventorying the natural resources on your property
- Identifying potential problems
- Considering your goals
- Facilities and equipment needed
- Feed sources and grazing management
- Deciding which type of animals to raise

Produced and compiled by
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Take an Inventory of the Resources on Your Property

Identifying Potential problems

Consider the following resource issues on or near your property:

- Amount of available acreage
- Elevation and climate
- Slope
- Type of soil
- Erosion
- Type of vegetation present
- Availability of irrigation and drinking water

Amount of available acreage:

½ acre: Amount of available acreage may determine what type of livestock you can raise on your property. If you only have ½ an acre, then it will not be able to accommodate horses, cattle or most livestock. You might be able to have chickens, guinea fowl, rabbits, etc... You would have to provide feed and shelter year round for the animals, in addition to protecting them from wildlife predators like coyotes and foxes.

5 acres: If you have 5 acres, you most likely can accommodate horses, sheep, goats or some exotic animals, but you will have to supplement feed and provide facilities like shelter, feed storage and manure disposal areas.

10- 20 acres: If you have 10 acres or more, you will most likely be able to raise horses, small livestock or limited number of cattle and large exotic livestock. With 10 acres or more, you can most likely have pastures and the ability to use good pasture rotation management.

Remember to consider the space requirements for a home and livestock facilities, in addition to space requirements for the animals when considering buying acreage.

Elevation and climate:

Elevation and climate can dictate the type of vegetation you can grow for your animals. Most grasses and legumes grow well in our county up to 3500 feet elevation. Western Nevada County averages between 36-54 inches of annual rainfall. All elevations in Nevada County can freeze in the winter and the lower elevations can have extreme heat in the summertime. Make sure the type of animal you are considering can withstand and do well in our climatic conditions, or make sure you can provide the correct type of shelter for them.

Slope:

The slope of a property can limit the type of animals to raise. If the property is too steep, animals won't be able to exercise or travel to an area for grazing. In addition, if you try to raise livestock on slope, manure and sediment loss can occur. This could result in pollution to streams or ponds as well as losing valuable top soil on your property.

Soil and erosion:

Know the type of soil on your property. Contact the local Resource Conservation District to help you determine your soil type, recommended uses and its limitations. Too many animals in a small area usually results in soil compaction. Storm water is not able to penetrate and percolate through the soil which results in run-off of manures and sediment. This also results in very muddy paddocks or pens in the wet months and dusty paddocks in the dry months. Keeping vegetation in these areas will reduce muddy and dusty pens and keep your animals cleaner.

Filter strips or buffer zones next to these areas will trap and filter manures and sediment and aid in limiting the run-off. If you do have sloped property, consider adding a filter strip of vegetation like shrubs at the bottom of the slope, especially near the banks of streams or ponds. Not only will this create a wildlife corridor, this strip of vegetation can filter some of the run-off and keep pollution from

the water body. You can also use bales of straw to absorb some of the run-off.



Berry bushes above act as a buffer to pond.

Type of vegetation present:

Consider the type of vegetation when considering what type of livestock to raise. If your property is full of chaparral, manzanita and/or berry bushes, even native grasses won't be able to re-establish themselves until the brush is cleared, or at least reduced. Goats are the type of livestock mainly suited to have in brushy areas. They are browsers and will eat the brush and keep it managed on an annual basis so it will eventually die out. There are mechanical means of clearing brush for an immediate result, but annual brush management is needed or the brush will only grow back. Clearing brush and ladder fuels on your property will create good defensible, fire safe property.

It takes good pasture management in order to look like the picture in Figure 3. This pasture had the weeds sprayed with a herbicide, and then seeded for an irrigated horse pasture. A no-till drill was used to deposit the seed and fertilizer into the ground without the need for tilling the soil. Good grazing practices were used and a "sacrifice area" was developed in a nearby paddock when removing the horses from the pasture. You will need to move animals off the pasture when irrigating or when the grass has been eaten down to 4" in height. Figure 2 is a photo of the same pasture when it was over-grazed and full of inedible weeds.

If your acreage is mostly weedy type vegetation, you will most likely have to use an herbicide or grazing method to reduce the infestation. Once the infestation is reduced, it is highly recommended seeding with either a dryland seed mix or an irrigated seed mix. By establishing desirable vegetation, many of the weeds will get choked out. There are many weeds that are poisonous to livestock but livestock rarely eat them unless extremely hungry. Know your vegetation. Just because it looks like there is something to

eat in the pasture, it doesn't mean it is desirable, palatable or even good forage for your type of animals. Fertilization and grazing management will be needed to maintain desirable, good quality vegetation for your horses and livestock.

Contact your local Resource Conservation District and Natural Resource Conservation Service office, the local UC Extension Farm Advisor or the County Agriculture Commissioner for information on animals, natural resource concerns, soils information and seeding recommendations.



Figure 2 Weedy and over-grazed pasture (Before)



Figure 3 Pasture re-planted, fertilized and grazed correctly (After)

Availability of irrigation water

Find out if your property has access to irrigation water from either the Nevada Irrigation District (NID) or from your well. Irrigation of pastures or crops can be a drain on your well water and add costs associated with pumping it from the well. On some properties,



there is enough of a slope to accommodate “gravity-fed” irrigation water from an NID ditch, thereby eliminating electricity costs. Property owners do NOT have automatic water rights even if water runs through your property. There is an additional charge to “buy” irrigation water from NID. It is not recommended to use irrigation water for animal drinking water because it could contain pathogens.

Consider Your Goals

Choosing the right animal for you and your property depends on the following:

- ✓ How much time will raising the animals take on a daily basis?
- ✓ Do I want to raise a pet, or breed, train, compete or sell commercially?
- ✓ Do I have the financial resources to build housing, shelters and purchase equipment?
- ✓ Can I protect the animal from predators?
- ✓ Can I afford feed, veterinary care, shoeing, tack and supplies?
- ✓ Do I have the type of fencing to accommodate the animals?
- ✓ Can my acreage support the type of animals on a year round basis, even if supplemental feed is supplied? What about in the wet winter months?
- ✓ Are there any local ordinances, zoning laws or CC&R’s that would prohibit the animals?
- ✓ Is there drinking water available?

Identify Type of Facilities and Equipment Needed

Good fences make good neighbors!

Fences:

Permanent perimeter fencing should not only contain your animals but should also keep predators out. Perimeter fencing can be electrified, powered by either electricity or solar chargers. Do not use barb wire to fence horses. Wood fences can be painted and look great but need maintenance and some animals will chew the wood. Vinyl fencing also looks great but may not be strong enough to adequately hold livestock. A properly constructed woven wire fence will contain most classes of livestock and horses. An electric wire or tape can be added to permanent fencing to increase its height and keep livestock off, thus prolonging the life of your fence.

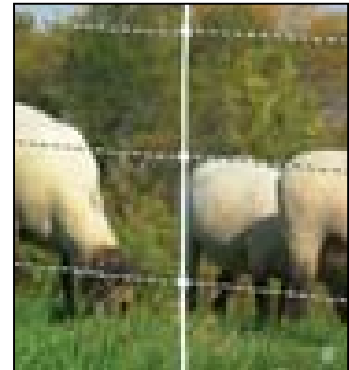


Permanent wood fencing



Woven wire fencing with appropriate height for type of animal

Electric wire fencing is excellent for temporary fencing to move from area to area



Solar fence charger with electric web fencing for interior fencing

Whatever type of fencing, gates, chutes and alley ways you decide upon, make sure it will accommodate the size, type and number of livestock, and allow you to move the animals for rotational grazing. Start small; avoid over-stocking.

Build your roads to allow access to areas such as hay storage and barns.

Remember to include your water source when planning your fencing and pen, paddock or pasture lay out.

Shelters and Barns:

There are many types of shelters and barns for your animals. If you have horses in box stalls (usually 12' x 12'), they will need additional area for exercise. Make sure the facility you choose is made for the type of animal you are raising and will protect them from dogs and other predators. Barns come in different sizes, styles and can be custom designed, depending on how much you plan to spend.



If you have several animals together in a pen or paddock, remember that this will require supplemental feed. When animals are in close confinement, it can create problems. Some of the issues will be competition for feed, fighting, over-grazing, weed infestation, soil compaction, soil erosion, muddy or dusty areas, flies, concentrated areas of manure, increased odor and increased chance of disease or sickness among the animals. It is best if you can sort by age. Keep the young together and the old together, if possible.



Feed Areas:

Include a feed area in your facility plan. Additional considerations would be an equipment room for saddles, tack, show equipment, blankets, heaters, extra buckets, etc.. Feed rooms or areas should be fenced off where horses and/or livestock can not get to it. Animals, especially horses, can get serious digestive upsets or diseases by over-eating grain and other feeds. Sheep are also susceptible to over eating. It is recommended to use bungee cords to secure your feed barrels to keep livestock and wildlife out. Wildlife can also contaminate feed by defecation or transmitting diseases. It is best to cover or enclose your hay to keep it dry. If horses eat moldy hay, they can get very sick and colic. Horses have very sensitive digestive systems compared to cattle and other ruminants. Cattle can eat moldy hay, although it will be less nutritious.



Feed Storage:

Keep each type of animal feed separate. Some cattle and chicken feed contains additives that are poisonous to horses. Purchase your feed from a reputable feed dealer and buy quality feed products. This will help ensure healthier animals, and minimize costs due to sickness.

Label your feed bins in case someone else helps you feed; this will avoid confusion and decrease the chance of mistakes.

Ventilation:

Make sure your facility has adequate ventilation so any ammonia smells or odor won't get trapped, and also allow for air circulation especially important in the summer months.

Manure Disposal:

Decide on an area to collect manure for disposal away from your neighbors, ponds or streams. Pollution can kill fish and seriously harm the ecosystem. Composting is a great way to use the manure and get the benefits of a soil amendment for your garden. This is best done with smaller amounts of manure and usually takes about 3 months to decompose if the mix and conditions are right. Pine and/or cedar wood shavings make great bedding for most animals but take longer to break down. Horse owners can spread the manure/ shaving mix for a jogging path around the property. This cushions the surface for the horse and allows the manure to dry out quickly.



Feed Sources and Grazing Management

There are different nutritional needs for different animals and for each stage of life. Young and growing animals need increased amounts of protein compared with the adult. When an animal is pregnant and later begins lactation, the calorie needs greatly increase. In addition to increasing the quantity of feed, you should increase the quality of feed so that it is higher in protein, vitamin and minerals to meet the animals' needs.

When managing a pasture for livestock grazing, always follow the 12" : 4" grazing rule. The rule of thumb is to put animals on the pasture area when the grass is a minimum of 12" in height and remove them when it is grazed down to 4". Have a rotational grazing plan for your property that includes a smaller sacrifice area. A sacrifice area can be a grassy paddock or pen in which the animal will require supplemental feed. If you have an irrigated pasture, the animals should be removed while irrigating. If you have both a dryland annual pasture and an irrigated pasture on your property, you might graze the annual dryland pasture through the spring until it is about 4" in height. Then, start grazing the irrigated pasture throughout the summer and early fall months. Pastures need fertilization management in addition to grazing management.

Horses tend to be selective grazers and graze pastures in patches. It is a good practice to follow up with sheep or cattle on the same pasture provided the grass is still high enough. Cross species grazing also can reduce the parasite load to the animals because some parasites are species specific, which means if cattle graze and ingest a horse parasite, the parasitic cycle may end with the cattle.

Almost all farm animals need annual vaccinations and de-worming as part of a basic management plan. Horses need their teeth checked annually.



Types of Animals

Horses:

Horses can be great enjoyment for the whole family. If you are a novice horse owner, consult with your local veterinarian, local UC Extension Ag Advisor or resource conservation district regarding local concerns and information on raising them. Horses prefer grasses and legumes in pastures. They do well on our local dryland annual range grasses although weeds must be managed because some of them are poisonous to horses. Horses can founder on lush spring grasses; therefore, spring grazing should be reduced and dry hay included in the diet, if possible. Horses do better with the pasture mix of 75% grasses/ 25% legumes such as clover. Always evaluate your horses as to their body weight and condition. Make feeding adjustments when necessary.

Cattle:

Cattle prefer grasses but will browse on brush. Cattle will eat the coarser grasses so they do well on pasture with horses or sheep, which prefer tender growth. Cattle can eat a 50% grasses/ 50% legume mix. Cattle require special equipment for handling. There is a new interest for grass fed beef which enhances the commercial opportunities. In this county, it takes approximately 15 acres to supply enough nutrition for one beef animal per year.

Sheep:

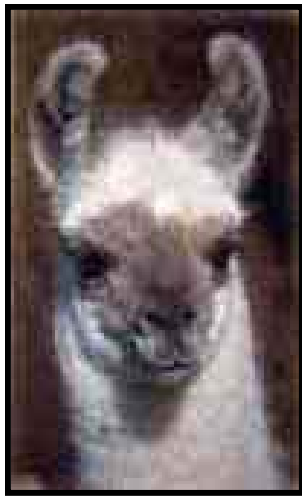
Sheep prefer grasses but will also browse on brush. Sheep do well with cattle and goats. Be careful if you have horses with sheep because most horse feeds are high in copper which can be toxic to sheep. Sheep do not require special equipment for handling but should be sheared at least once yearly. Hair sheep do not require shearing. Sheep do need to be protected from dogs and other predators.

Goats:

Goats are the best all-around groundskeepers. They eat brush, leaves, poison oak, berry bushes and grasses. They are one of the best management tools for clearing and reducing brush on your property. Goats will girdle and kill brush from returning when used for annual property management. Goats do well with sheep, cattle and horses. They do not require special handling equipment but they need to be protected from dogs and predators.

Other farm animals include chickens, ducks and geese, game birds, rabbits, pigs, donkeys, llamas and alpacas, and even ostriches. They can all do well in Nevada County if managed properly. Do not overcrowd animals or overgraze your property and you will find great joy in raising animals.

Consult with your local UC Cooperative Ag Extension office (530) 889-7385 or the Resource Conservation District / Natural Resource Conservation Service office in Grass Valley for more information. 530-272-3417.



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