

TIPS FOR DESIGNING PENS AND CORRALS

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You're going to need pens or corrals if you have livestock.

Livestock need certain amounts of space according to research by a number of behavioral animal scientists. This includes space to rest, drink, consume feed, interact with other animals, and avoid harsh weather.

Take time to research, sketch, and estimate the space needed, then go and mark out the pen.

If animals in an enclosure get along with each other, they seldom need to be separated; however, if their dynamics involve antagonism, then some species do better if they can find their own "private" area during rest periods.

With horses we refer to "stall space" since they often need separate areas to rest. With other species we refer to resting areas as "shelter" since it can be a barn, windbreak with roof, or other shelter type such as a protective shrub thicket.

Animals feel "at risk" when lowering their head to eat or drink, so a certain space buffer is needed so they can maintain suitable hydration and nutrition. Insufficient drinking and feed bunk space often leads to aggressive animals keeping others from getting enough food and water.



Corral and pen designs range from simple to complex depending upon needs.

Below are recommended space requirements for a few species derived from research by a number of universities and collated by the National Academy of Sciences.

Horses: Each horse needs 100 square feet of stall space (this can be in separate stalls, or large open loafing [3-sided] shed if animals do not antagonize each other), 200 square feet of corral per horse in addition to pasture, 2 feet of bunk space set aside from others, 3 feet of space around drinking infrastructure.

Cattle: 75 to 100 square feet of shelter, 100-125 square feet of corral,

pasture, 1.5-foot of bunk space, 1.5-foot of water space, and weather protection.

Goats/sheep/alpaca: 20 to 25-square foot of shelter, 50-square foot of corral space, pasture, water, and weather protection.

Llama: 50-75 square foot of shelter, 75 to 100-square foot of corral, pasture, 1 foot of bunk space, access to water, and weather protection.

Pigs: 48-square foot of shelter, 200-square foot of corral, 1 foot of bunk space, access to water, and weather protection.

Buffalo: 100-square foot of shelter, 300-square foot of corral, 2 foot of bunk space, pasture, and access to water.

Regardless of species, all these numbers need adjusted during various times of the year, such as breeding, handling, processing, and birthing. Start with recommended space then add 30 percent for peak times of the year, another 25 percent for various outbuildings, and another 20 percent for you. This can be accomplished by adding steel panels or constructing additional pens if room on the site.

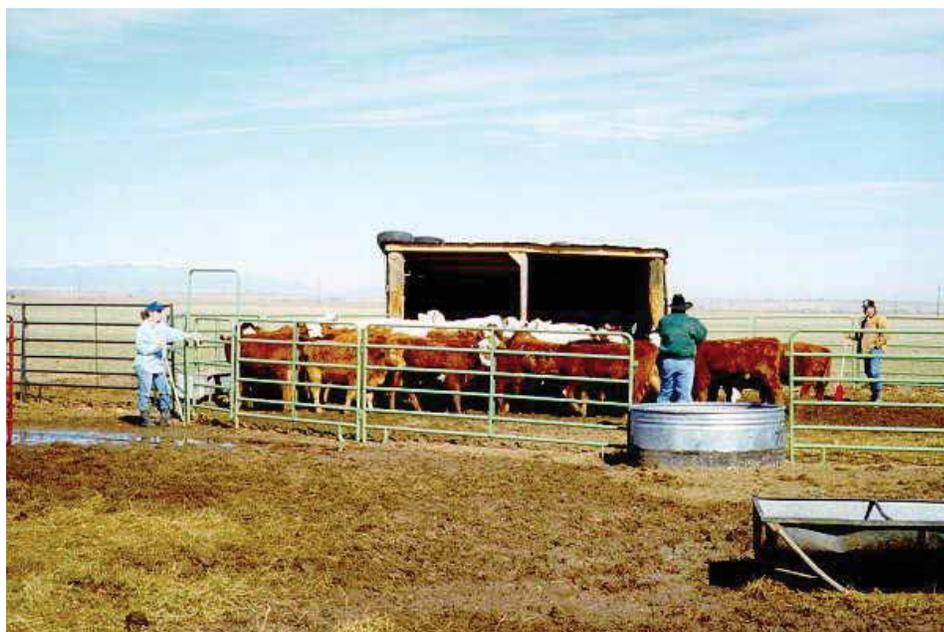
Species and System

Various species need different amounts of buffer space because their herd dynamics vary, and they need different types of fencing depending on how they interact, behave, and communicate. This factor includes the height of fencing material and type of construction.

Horses are a great example, since they need space to flee and pursue during social interactions, which develop social dominance patterns. This requires wider pens with “escape” routes. These requirements can change when foaling out, breeding, feeding, or a new animal is introduced since dominance patterns shift with each changing social dynamic.

Form and Function

The form of a pen or corral includes the shape, rigidity, construction, and height. Examples of this would be a square pen set rigid with posts and 58-inch tall, 6-bar steel panels. The number and placement of gates and the position of the pen to barns, driveways, and water sources are all involved in determining the



B Heart Livestock utilizing steel panels

“form” of a pen or corral. Some examples of historic pen forms include snow fence erected temporarily in the corner of a pasture enclosed with barbed wire or a buck-rail pole pen on the national forests.

The function of a pen or corral should be designed to enhance the effectiveness of its “function.” Examples include crowding pens, cutting pens, loading pens, holding corrals, breeding pens, cutting alleys, loading alleys, and a wide number of other uses and combinations. Your planned function should dictate pen or corral form!

Temple Grandin, animal science specialist, a world-recognized expert in animal behavior at Colorado State University, has basic tenants that include:

- Corrals and pens should be as simple as possible while providing ease of movement for animals.
- Facilities should provide easy access to water and shelter for animals.
- Animals should move into the system to get either feed or

water daily so they are comfortable and relaxed about entering the pens.

- Pens should be stable and made with materials and criteria that fit the characteristics of the animals.
- A gate or corridor that adjoin a location easily reached by trailers and trucks should allow loading and unloading of animals with as little stress as possible.
- The corral system should allow separation of each species into at least three subgroups for management purposes. This often includes a diversion gate or lane to allow redirection without stress to animals or safety issues for you.
- Footing should be as stable as possible in all seasons.
- Areas should be naturally well-lighted or erected with suitable lighting for hours of darkness. Erect visible barriers only where they reduce stress on animals.
- Support infrastructure for the facility such as posts should be stable enough to prevent the

pen or corral sides from moving if pressed on or leaned over by animals.

- All facilities should be regularly maintained for working function, breakage, and removal of any risk of sharp or prominent edges. Also a little lubricant on gates makes things much quieter.

Some parts of the facility should accommodate change or adjustment to different needs. An example is the ability to shift interior dividing panels to adjust pen sizes or to add an enclosure within the pens to store feedstuffs.

Facilities should be designed to protect animals from outside risks and predation.

Erect facilities where they can be monitored easily by eye or video.

The facility needs designed so manure, refuse, and carcasses can be removed easily with equipment.

Cost and Lifespan

Ranchers built corrals years ago with posts and poles. Some of those still stand today. Most recently, some corrals are built with railroad tie posts and welded pipe rails, which are very strong and durable. Some feedlots pour concrete pens.

But for a small operation, consider steel corral panels that are the appropriate size and height for

your animals and connected to large posts at corners, gates, and stress points.

Some suggestions based on previous successful designs used in Wyoming

- Corral/pen systems that allow a pass-through lane for trucks and trailers with gates at each end allow easier loading and unloading of animals without losing control.

- “Over-build” corrals and pens for post strength and material quality.
- Hang gates carefully, strongly, and with appropriate swing function.
- Make sure strong gate latches are installed.
- The design should allow you to manage agitated animals easily without risk to them or you.
- Install a hay pen that is easy to off-load hay into but allows feeding. This can be on the outside or in a lane between pens.



Classic western corral in central Wyoming



Forest Service pen

Final Thoughts

Corrals in Wyoming that have stood effectively for decades were probably installed by someone who had tried the wrong things first and then spent years telling kids “don’t climb on the gate.” People who erect and maintain pens, gates, and corrals do not want to adjust for sag or wear any more than absolutely necessary. And a sagging gate does not latch as securely or easily, both of which can be safety issues when handling animals.

Build the best you can afford – it’s a good investment in time, money, and safety.

If you would like to discuss corral or pen design there are a number of UW Extension educators across the state available with expertise in corral design.

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