

NEGOTIATING FARM LEASES & LEASE BUDGETS

LESSONS LEARNED: HOW TO BETTER NEGOTIATE GRAZING
LEASES AND PRACTICAL TIPS FOR GRAZING BUDGETS

BEST PRACTICES FOR SOLAR GRAZING, SILVOPASTURE ON PRIVATE LAND, AND SILVOPASTURE OR GRAZING ON PUBLIC LAND

*Lessons from the USDA Beginning Farmer & Rancher
Project at NC Choices*

This series of guides has been prepared for farmers and ranchers who are interested in leasing private or public lands for grazing and silvopasture. NC Choices is validating lease strategies through its USDA Beginning Farmer and Rancher Project, a three-year program to match niche meat producers with land opportunities across North Carolina.

Solar Grazing: p. 2-4

Silvopasture Grazing: p. 5-7

Leasing with Land Trusts: p. 8-9

Sample templates linked on all pages.



United States Department of Agriculture
National Institute of Food and Agriculture





BEST PRACTICES FOR SOLAR GRAZING

SOLAR GRAZING IN NORTH CAROLINA

Solar grazing is the practice of grazing livestock (most commonly sheep) on solar installation sites. There has been tremendous growth in photovoltaic power generation (“solar farm”) development in North Carolina. In fact, the state is ranked third in the nation for installed solar capacity.[1] The over 9,000 acres of solar installations represent an extraordinary opportunity for beginning farmers to enter into long-term leases with solar farm owners to integrate grazing animals.

BENEFITS OF SOLAR GRAZING

Environmental Benefits

- Maintain a better sod base
- Use fewer chemicals and reduce costs
- Improve soil health
- Retain water
- Produce food from previously underutilized land
- Solar farms can support a greater diversity of plants and pollinators

Economic Benefits

- Grazing has the potential to provide long-term cost savings for the solar company as farmers improve the forage, soil, water retention, and thereby reduce the need for site maintenance
- The longer the grazing contract, the better the solar company will reap long-term benefits and lower management

Improved Public Perception

- PR extends beyond the public and also plays a key role within the farming and agricultural community
- With farmland increasingly being transferred to solar installations, grazing solar provides a visual example of collaboration within rural communities and is key to building positive relationships within the agriculture and solar communities

Improved Maintenance and Oversight

- Having farmers on the site on a regular basis may allow for maintenance issues to be spotted sooner, before they become an issue

DOWNLOADS

[Sample Solar Lease Template](#)

[Sample Solar Sheep Grazing Budget](#)



BEST PRACTICES FOR SOLAR GRAZING

Special thanks to the American Solar Grazing Association for their resources: check out more at <https://solargrazing.org/>.

When working with a solar company, grazers may have the option to just use the site for grazing and mowing is managed by an existing Operation and Maintenance costs (O&M) company. Alternatively, the grazer can propose to assume complete management of the site including mowing, spraying, site improvements, and grazing in exchange for payment.

Many solar companies are interested in contracting grazing with farmers at comparable to or cheaper options than their typical ground maintenance costs. Determining a company's ground maintenance cost is often difficult as this information is not widely shared.

Most companies include a budget line item for O&M costs, which can either be paid to an outside mowing contractor or used to purchase and maintain the company's own equipment and pay for labor.

It's also important to account for both site maintenance & mowing. Note that solar companies may budget funds for site maintenance & improvement to manage things like fertilizer, herbicide spraying, runoff management/repair, etc., which may be a separate expense line item. Since grazing can both manage the mowing as well as the runoff and site health, both of these expenses should be accounted for when determining your cost. Costs will vary widely based on climate, site size, and the relationship between the lessee and the owner. See solar budget for more details.

Remember, not all solar sites are created equal and panel configuration may also vary among sites. Do your due diligence to search the available sites online via programs like google earth and if possible, make a site visit. Some panels sit too close to the ground and have configurations that would not work for managed grazing.





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BEST PRACTICES FOR SOLAR GRAZING

WHAT YOU NEED TO KNOW: GRAZING, WATER & LAND PREPARATION

- Forage production may run significantly less than normal production, since most sites have been graded clean prior to panel installation.
- Water may have to be hauled to the site as most locations do not have water.
- Grazing may only be suitable during the growing season.
- Prioritize time and energy for optimal grass growth due to increased requirements of lime and fertilizer at most sites.

REGULATIONS, TRAINING, AND INSURANCE

- **Finding the right person to contact at each solar company is critical.** Network and identify solar companies in your area. Becoming a member and/or networking with state or national partners, such as the American Solar Grazers Association, can help make key connections and lend credibility when contacting solar companies.
- **Most sites are considered industrial power substations.** This could result in the need for OSHA-guidelines and training being required. Contact the company to know more.
- **If applying herbicides as part of an O&M contract,** the farmer may be required to get and maintain a commercial pesticide applicator's license.
- Be prepared for **possible increased liability insurance.**
 - Example: Approximately \$1-\$2 million coverage range + workers comp + umbrella policy. These expenses must be factored into your costs when factoring your price per acre.
 - See the sample budgets below for examples of how insurance costs can affect your price per acre budget.

DOWNLOADS

[Sample Budget: Solar Sheep Grazing](#)

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BEST PRACTICES FOR SILVOPASTURE LEASES

For more information and detail, please see the [Silvopasture Management Video](#) and associated resources on the [NC Choices website](#).

[See a sample silvopasture lease here.](#)

SILVOPASTURE LEASING ON PRIVATE LANDS

Silvopasture is the intentional integration and management of trees, forages, and livestock on the same land. Silvopasture can be achieved by either (1) planting trees into existing pasture or (2) thinning woods and establishing forages as understory.

POTENTIAL BENEFITS OF SILVOPASTURE GRAZING


Environmental Benefits

- Improved animal performance and potential gains due to increased comfort from tree shade
- Shelter from the elements (wind, rain, snow)
- Marginal cropland can be converted to multi-species timber and forage for livestock grazing systems
- Increased wildlife diversity
- Improved water quality
- Better soil base due to increased organic matter
- Enhanced erosion control from wind and water erosion
- Improved plant nutrition uptake
- Control insects
- Reduced wildfire risk (reduced fuel load)

Economic Benefits

- Allows for multiple sources of income (i.e. meat sales, timber, haying and forage production) from same property
- Lease income to landowners (i.e. leasing to a livestock farmer as well as recreational leases for hunting, etc)
- Supports local farmers and the local economy
- Looks attractive and can improve property value
- Multiple revenue streams helps cash flow the operation while the tree crop matures

WHAT YOU NEED TO KNOW: MAINTENANCE

- Grounds maintenance could include roadside mowing and maintenance outside of fencing.
 - Periodic weed eating around fences and equipment or application of herbicide.
 - Most sites are roughly 20–40 acres, with some being more than 150 acres.
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BEST PRACTICES FOR INCORPORATING LIVESTOCK INTO SILVOPASTURE SYSTEMS

Integrated management systems involves careful planning. Here are some considerations that can help you get started.

FORAGE SELECTION

Consider forages that are compatible with partial shade, soil type, and best suited for livestock nutritional needs. Consider your grazing schedule and seasonality when determining cool and warm season grasses.

- Are you planting annuals, perennials, or both? Annual forages can be used to help maintain ground cover and provide forage while waiting for the optimal planning window for perennial pasture.
- Do NOT overgraze. Rotate livestock and maintain proper stocking density, making sure to provide rest periods for forage to recover.
 - On cool-season forages, move cattle in when 8-10" tall and out when 3-4" tall.
 - On warm-season grasses, move cattle in when 12-18" tall and out when 6-8" tall[1].

TREE MANAGEMENT, & INFRASTRUCTURE

Do not leave animals in one place for extended periods of time: this can affect tree growth and reduce soil compaction, increasing root and tree damage which can attract insects and disease.

- Consider your available land, acreage, and resources when determining your enterprise and/or species diversification.
- Clearly outline the timber management plan with the landowner. Be sure to understand the timeline for tree management and timber harvest in the lease in order to avoid conflicts from grazing.
- Infrastructure is frequently the most costly component when incorporating livestock into a silvopasture system.
 - Permanent perimeter fencing will be needed for cattle, though temporary fencing can be used for grazing management and may be sufficient for goats, sheep, and poultry.
 - Consider flexible, easy-removal varieties.
 - Access to water is key.





SAMPLE STEP-BY-STEP PLAN FOR SILVOPASTURE PREPARATION FOR LIVESTOCK

THINNING WOODS AND ESTABLISHING FORAGES AS UNDERSTORY FOR LIVESTOCK

- **Step 1:** Revisit the forestry management plan on the land if one exists.
- **Step 2:** Consult your area NC Cooperative Extension Forestry Agent to determine what degree the stand needs to be thinned to achieve shading to allow for forage growth (approx. 25%-45% tree canopy for warm season grasses; 40%-60% tree canopy for cool season grasses).
 - Work with your forester to determine the value of the wood to be thinned and approximate project timeline.
- **Step 3:** Work with a contractor to thin the trees. Thinned wood may be marketed as pulp wood or chip wood or saw timber depending on if it presents any value. If there is no value to capture, a forestry mulching machine or bulldozers could be used to push up and pile debris.
- **Step 4:** Handle any trash from the thinning process. Do site prep work such as removing stumps, branches or wood chips and smooth land.
- **Step 5:** Take soil samples and determine amounts of lime and fertilizer needed to establish forage.
- **Step 6:** Work with your local NC Cooperative Extension agent to determine the appropriate seasonal planning window to establish forages and add amendments.
- **Step 7:** Install any needed infrastructure such as fencing and water lines, etc. Depending on your timing and seasonality, you may want to install infrastructure prior to establishing forage.
- **Step 8:** Allow for forage establishment before grazing.

PLANTING TREES INTO PASTURE

- **Step 1:** Consult your area NC Cooperative Extension Forestry Agent to determine what trees are best for your soils
- **Step 2:** Work with your local NC Cooperative Extension agent to determine the appropriate seasonal planning window to establish forages and add amendments for establishment
 - May be several years before trees are a sufficient size to be grazed without damage.



BEST PRACTICES FOR GRAZING ON PUBLIC & PROTECTED LANDS

PUBLIC LANDS GRAZING IN NORTH CAROLINA

Land access and securing a long-term lease continues to be a top impediment for beginning farmers. However, there are many land trusts working across North Carolina to protect land that encompasses a significant amount of acreage. Land trusts and protected lands can offer opportunities to beginning meat producers in need of additional pasture.

BENEFITS OF LAND TRUST & FARMER PARTNERSHIPS

- Land trusts are increasingly interested in not just preserving land they own as natural and scenic areas but also in utilizing the land for agriculture. Animal agriculture adds a public attraction that complements many trusts' educational and outreach efforts.
- Many of these trusts have acquired prime agricultural land which may include a well-cleared pasture or some infrastructure on-site. However, it's best to never count on existing infrastructure.
- Due to the shared agricultural-use interest, some land trusts can offer very favorable rates well below market value. They may be open to work trades in place of lease payments or in conjunction with lease payments, such as deducting the value of labor, equipment hours, or property improvements from payment.
- Livestock may be adaptable to different sizes of acreage. Farmers can benefit from extended grazing even if a small amount of acreage is available by practicing seasonal grazing.
 - However, if permanently on land, expect 2.5 acres of grazing land to support a cow & calf.
- Livestock are adaptable to less desirable areas such as poor soils or areas unsuitable for cultivation. For example, goats can help clear understory debris and remove secondary tree growth for transitional areas, reducing the land trust's management and input costs.
- Livestock are a key component in cultivating regenerative agriculture. Cattle can utilize a variety of forages, goats on overgrown areas and sheep can do so on sensitive areas.



BEST PRACTICES FOR GRAZING ON PUBLIC & PROTECTED LANDS

TIPS FOR SUCCESSFUL LEASING & LIVESTOCK INTEGRATION

- **Understand the greater vision** for the land trust (are there expectations for native plants, organic certification, or other land requirements?)
- If possible, develop a *lease* with the land trust instead of a *license agreement*.
 - A lease agreement grants exclusive possession of the area based on agreed upon conditions being met, whereas a license agreement grants permission to use the property (meaning the land is not exclusively in the farmer's control, and other farmers could be added to that land or other changes could be made). Both options can work, but a formal lease gives the farmer more ownership over land decisions.
- When possible, lease for a minimum of 3 years as beginning livestock producers need long-term commitment to make infrastructure investments. Pasture improvements can take years to implement and require longer turnover times to bring that animal to market.
 - For example, cattle can take up to 3 years; pigs can take up to 1 year; and lambs and goats can take up to 1.5 years.
- A **"trial" period** can also be employed before a lease begins.
- Clearly outline **the process for settling disagreements**.
- **Permitted uses** are a key definition point. Properly identify limited-use and off-limits areas. These may be outlined in the grants that funded the conservation easements.
- **Look for a business model** that fits within the vision of the property and establish a grazing plan to determine carrying capacity.
- Maps, maps, and more maps: Clearly define use areas.
- Take soil samples.
- Establish adequate infrastructure requirements such as fencing, well, waterlines, electrical and handling facilities. **Be sure to outline responsibilities** for maintenance, repair, and/or replacement.
- Provide clean water to keep animals out of streams.
- **Public access & shared use provisions:** Many protected areas are incorporated into parks, farm incubators, trails, and multi-user landscapes.
 - Be clear on agreements as to exclusivity of use or terms of shared use.
 - Some properties may have higher insurance requirements for public use.
 - In shared areas, enact protocols to prevent cross-contamination of crops and outline a usage order for all tenants that prioritizes by type of use.
 - If you're leasing only part of a property – clearly define the process for expanding access on other parts of property when needed.

MORE RESOURCES FOR NICHE MEAT PRODUCERS

PRODUCED BY NC CHOICES

ABOUT OUR PROJECTS

NC Choices, an initiative of the Center for Environmental Farming Systems in collaboration with NC Cooperative Extension, promotes sustainable food systems through the advancement of the local, niche, and pasture-based meat supply chain in North Carolina. NC Choices provides information, technical assistance, educational programming, and networking opportunities for farmers, extension agents, meat processors, buyers, distributors, and consumers.

The NC Choices USDA Beginning Farmer and Rancher grant focuses on increasing the number of beginning farmers raising meat through either pasture-based or silvopasture systems by providing them with novel land acquisition strategies, resources, and training opportunities to increase skills, decision-making tools, and the market and buyer connections needed to operate profitably.



HELPFUL TOOLS FOR YOU & YOUR FARM

- Guided videos and templates for all types of production, processing, and marketing
- Frequently asked questions about getting into or expanding your meat business
- Online sales via meatsuite.com
- COVID-19 impacts and resources for navigating meat production

[1] <https://www.seia.org/state-solar-policy/north-carolina-solar>

[1] <https://cefs.ncsu.edu/resources/silvopasture-management/?portfolioCats=731>