

Site Prep for Groundcover Restoration

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*The Longleaf Alliance
Groundcover 201*



Objectives

- Preparing the Site
- Cutover Sites
- Old Ag sites
 - Pasture
 - Rowcrop



No Groundcover, No Habitat, No Food, No Fuel, No Ecosystem



In longleaf restoration...

- Good site prep should:

- Assist with the successful establishment of longleaf pine
- Control hardwood competition
- Conserve keystone species
- Allow Rx fire soon after planting
- Maintain botanical diversity or allow it to quickly recover
- Discourage weeds

- Bad site prep may:

- Prevent the successful use of Rx fire
- Encourage weeds such as dogfennel, climbing fern, rattlebox and blackberry that compete with longleaf and deteriorate wildlife habitat
- Eliminate much of the botanical diversity that makes longleaf pine forest the beautiful places that we enjoy



Site-prep



It may be there!



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Site Prep for Groundcover Restoration

It may be there!



You hold the key.



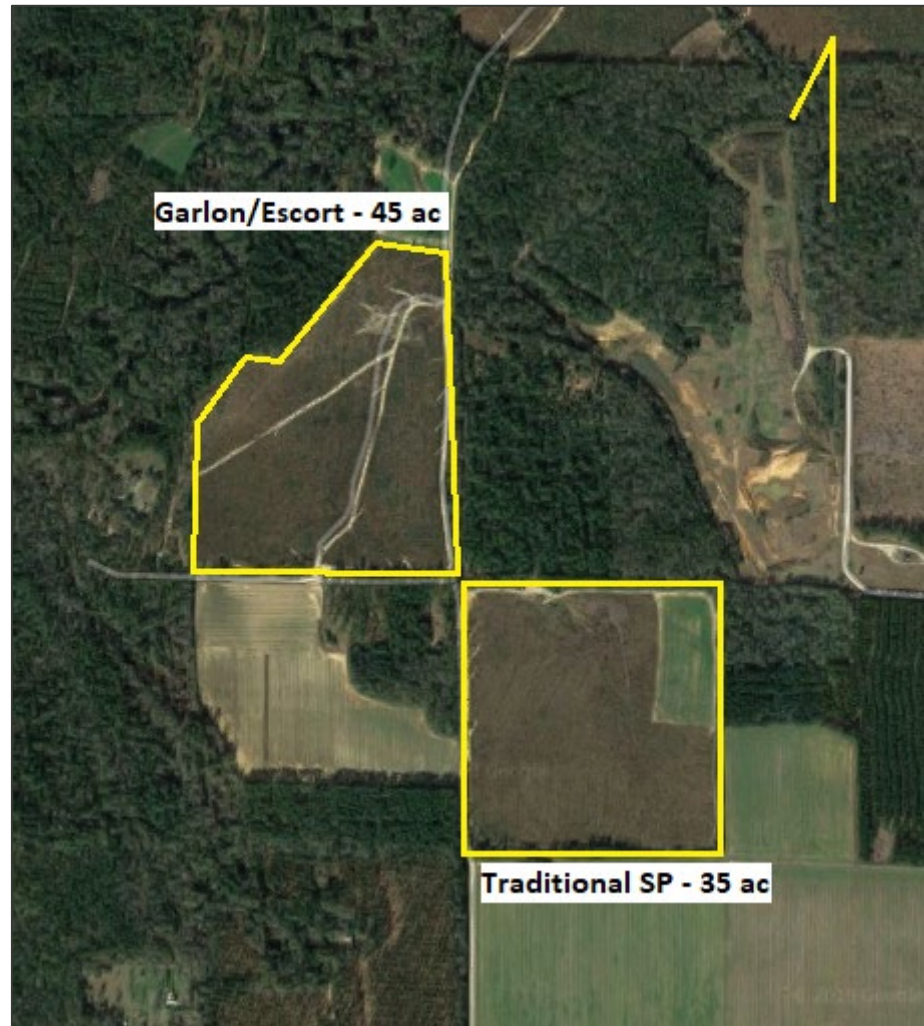
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Site Prep for Groundcover Restoration

Private Landowner - AL

Objectives

- Restore Longleaf
- Wildlife
 - Quail
 - Deer
 - Turkey
- Recreation
- RX burn!!!



Selective SP

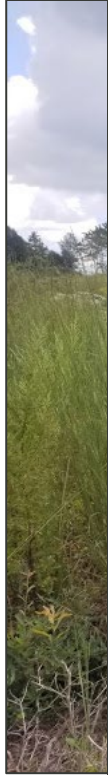




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Selective SP



Selective SP



Traditional Site Prep - AL



March after harvest



Chemical Site Prep - Sept.

Aug. 8.



Traditional Site Prep - AL



Survival

- Planted February 2018
- Survival Checked December 2018

SP Type	Req. planting TPA	Planted TPA	Surviving TPA	% survival
Traditional	454	475	460	97%
Selective	545	512	511	99%



Herbicide Efficacy on Common Species

Species	Hexazinone	Triclopyr	Imazapyr	Glyphosate	Metuslfuron	Sulfmeturon
Oaks	Red	Yellow	Yellow	Yellow	Yellow	Green
Sweetgum	Yellow	Red	Red	Red	Green	Green
Maple	Yellow	Red	Red	Yellow	Green	Green
Hickory	Green	Red	Yellow	Green	Green	Green
Cherry	Yellow	Yellow	Green	Yellow	Red	Green
Red Bay	Green	Red	Red	Green	Green	Green
Pine	Yellow	Red	Green	Red	Green	Green
Elm	Yellow	Red	Yellow	Yellow	Red	Green
Gallberry	Green	Red	Yellow	Green	Green	Green
Blackberry	Green	Red	Green	Red	Red	Green
Grass	Yellow	Green	Red	Red	Green	Red
Broadleaf Herbaceous	Yellow	Red	Red	Red	Green	Red
Legumes	Green	Red	Green	Red	Green	Yellow

Site Preparation

- Don't destroy an intact herbaceous layer during site preparation
- More intensive prep required if invasives or pasture grasses are an issue
- Use aggressive chemical treatments to manage invasive species
- Woody competition can be controlled with fire, mechanical, and/or chemical treatments



Thoroughly remove pasture grasses on old agricultural sites

- Bermudagrass
- Bahiagrass
- Fescue Grass

- Herbicides*



Control Invasive Exotics Before Restoration

- Cogongrass
- JCF
- Kudzu
- Privet
- Autumn Olive
- Bicolor/Sericea
- Etc..







Site Preparation Considerations

- Identify existing plant competition
- Determine plants likely to be problematic
- Choose best treatment(s) options
- Goal: to create conditions with little to no debris that will interfere with planting and ensure adequate seed-to-soil contact while providing long-term weed control.



Old Rowcrop Site





Thoroughly remove pasture grasses on old agricultural sites BEFORE restoring trees or groundcover

- Bermudagrass
- Bahiagrass
- Fescue Grass

- Herbicides*



Rowcrop Conversion Tips

- Leave field fallow for a year OR TWO.
- Survey field edges for problem plants.

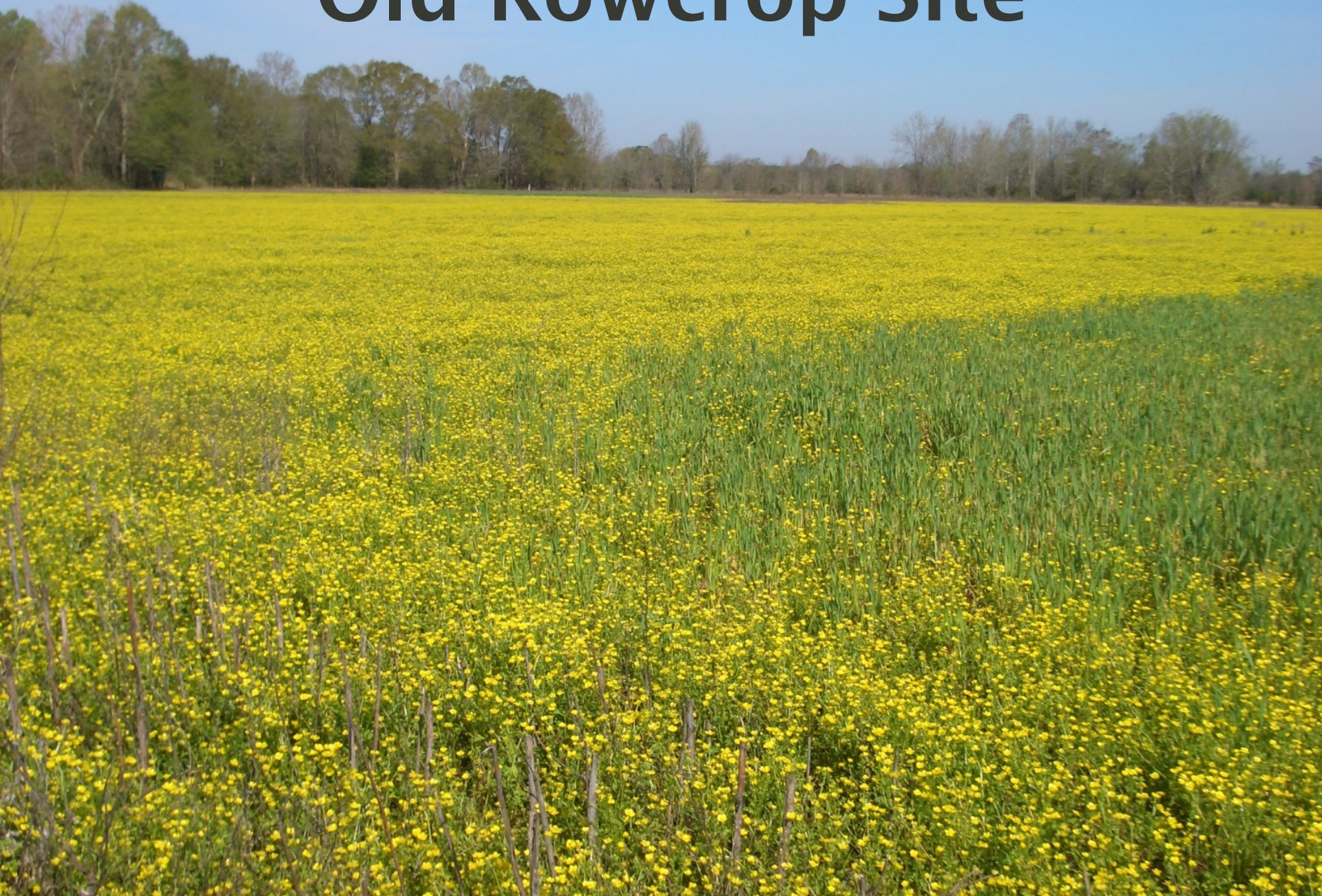




Herbicides



Old Rowcrop Site



Appendix 1. Herbicide use guide for common native warm-season grass applications.

Herbicide	Use	Application Rate	Objectives/Considerations
<i>Glyphosate</i> (Roundup, Accord, Gly-4, others)	Eradicating tall fescue and other existing cover prior to nwsg establishment, or while nwsg are dormaant.	Fall – 1.5-2.0 qts/ac Spring – 2.0 qts/ac	Broad spectrum herbicide, not selective. Post-emergence only – no soil activity or residual control.
	Controlling woody saplings, sericea lespedeza, thistles, bermudagrass, dallisgrass, yellow nutsedge	2.5 – 4.0 qts/ac	Additional applications may be necessary. Better control may be realized by tank mixing with other herbicides.
<i>Imazapic</i> (Plateau)	Pre-emergence weed control when planting bluestems, indiagrass and sideoats grama.	6 – 8 oz/ac	Residual weed control for approximately 60 days. Contact state wildlife agency if unavailable through private distributor. Check label for tolerance of specific nwsg and select forbs.
	Eradicating tall fescue and other select cover to allow the seedbank to respond.	12 oz/ac	
	Post-emergence weed control of johnsongrass, crabgrass, cocklebur and others in established nwsg.	6-8 oz/ac	
<i>Imazapic + Glyphosate</i> (Journey)	Pre-emergence weed control when planting bluestems, indiagrass and sideoats grama. Also for eradicating tall fescue and other existing cover prior to nwsg establishment, or while nwsg are dormant.	11 – 32 oz/ac	May damage nwsg and forbs if applied after greenup. Residual weed control for approximately 60 days. Additional glyphosate is necessary to effectively kill tall fescue when using lower rates of Journey.
	Post-emergence weed control of johnsongrass, crabgrass, cocklebur and others in established nwsg.	11 oz/ac	
2,4-D	Controlling unwanted broadleaf plants, such as thistles & cocklebur.	1 – 4 pts/ac Post-emergence application	Will also kill desired legumes and other broadleaf plants. May damage nwsg seedlings.
<i>Dicamba</i> (Banvel, Clarity)	Controlling unwanted broadleaf plants and woody species.	2 – 4 pts/ac Pre- or post-emergence application	Will also kill desired legumes and other broadleaf plants.



<i>Sulfosulfuron</i> (OutRider)	Pre- and post-emergence control of johnsongrass and other weeds in nwsg (including switchgrass).	0.75 – 2.0 oz/ac Pre- or post-emergence application	Groundwater may be contaminated when used in areas where soils are permeable or shallow water table.
<i>Triclopyr</i> (Garlon 3A)	Controlling sericea lespedeza and other broadleaf plants in established nwsg. Controlling woody saplings	1.0 qt/ac Post-emergence application 1 – 5 gal/ac; see label for various applications	Apply in early summer when sericea is in early vegetative stage. Does not damage nwsg, but kills most broadleaf plants. Refer to label for rates to control other species. High-volume and low-volume treatments require different rates.
<i>Metsulfuron methyl</i> (Escort, Cimarron)	Control of sericea lespedeza, bicolor lespedeza and other broadleaf plants.	0.1 – 2.0 oz/ac Post-emergence application	For sericea control, apply in bloom stage (August – September). Fall application may provide spring residual control. Does not affect grasses.
<i>Imazapyr</i> (Arsenal)	Control of woody saplings. Sometimes best accomplished with tank mixes of other herbicides.	See label for selected woody plants, application rates & mixes	Use as spot treatment where tree or shrub seedlings are invading.
<i>Sethoxydim</i> (Poast Plus)	Controlling undesirable cool-season grasses before nwsg emerge in spring. Reducing nwsg coverage when growth becomes too dense.	2 pts/ac Post-emergence application	When reducing nwsg density, use only every third spray nozzle (i.e., 1 open/2 closed).
<i>Clethodim</i> (Select)	Controlling undesirable cool-season grasses before nwsg emerge in spring. Reducing nwsg coverage when growth becomes too dense.	10 oz/ac Post-emergence application	When reducing nwsg density, use only every third spray nozzle (i.e., 1 open/2 closed).
<i>Imazethapyr</i> (Pursuit)	Controlling undesirable grass and broadleaf plants, including yellow nutsedge.	1 – 2 oz/ac Pre- or post-emergence application	Will not control legumes; thus, Pursuit can be sprayed over desirable legumes to control non-leguminous forbs.



Hayfield / Pasture



Hayfield / Pasture











Pack or Roll after Seeding

Pasture Conversion Tips

- Take a multiple year approach
- Don't rush due to a program
- Eradicate improved forages before planting
- Follow all recommendations specifically





Treated with 5% glyphosate and surfactant.
Other options include Sethoxydim SPC® @ 30-34 oz/acre*



Improved Forage Treatments

- Fescue - Glyphosate treatment in the fall and again in the spring
- Johnsongrass – Sulfosulfuron (OutRider), Imazapic, Glyphosate
- Bahiagrass - Metsulfuron Methyl (Escort, MSM60) unless longleaf or legumes are present, Imazapic, Imazapic + Glyphosate, Sethoxydim
- Bermudagrass - Imazapyr*, Glyphosate (multiple applications), Sethoxydim

* Wait *AT LEAST* 6 months before planting NWSG behind an imazapyr treatment. One treatment likely will not eradicate it.





A photograph of a field of yellow flowers in the foreground, with a rocky, forested hillside in the background. The text "Questions?" is overlaid on the lower left portion of the image.

Questions?

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