

Site Preparation

Get to the Root of the Problem

Pat Minogue, Ph.D., R.F.
Assistant Professor of Silviculture

School of
Forest Resources
and Conservation



UF | UNIVERSITY of
FLORIDA
IFAS Extension

Site Preparation Tools

- Fire
- Machinery
- Herbicides
- Hand Clearing
- Grazing



Drum Chopper

Prescribed fire



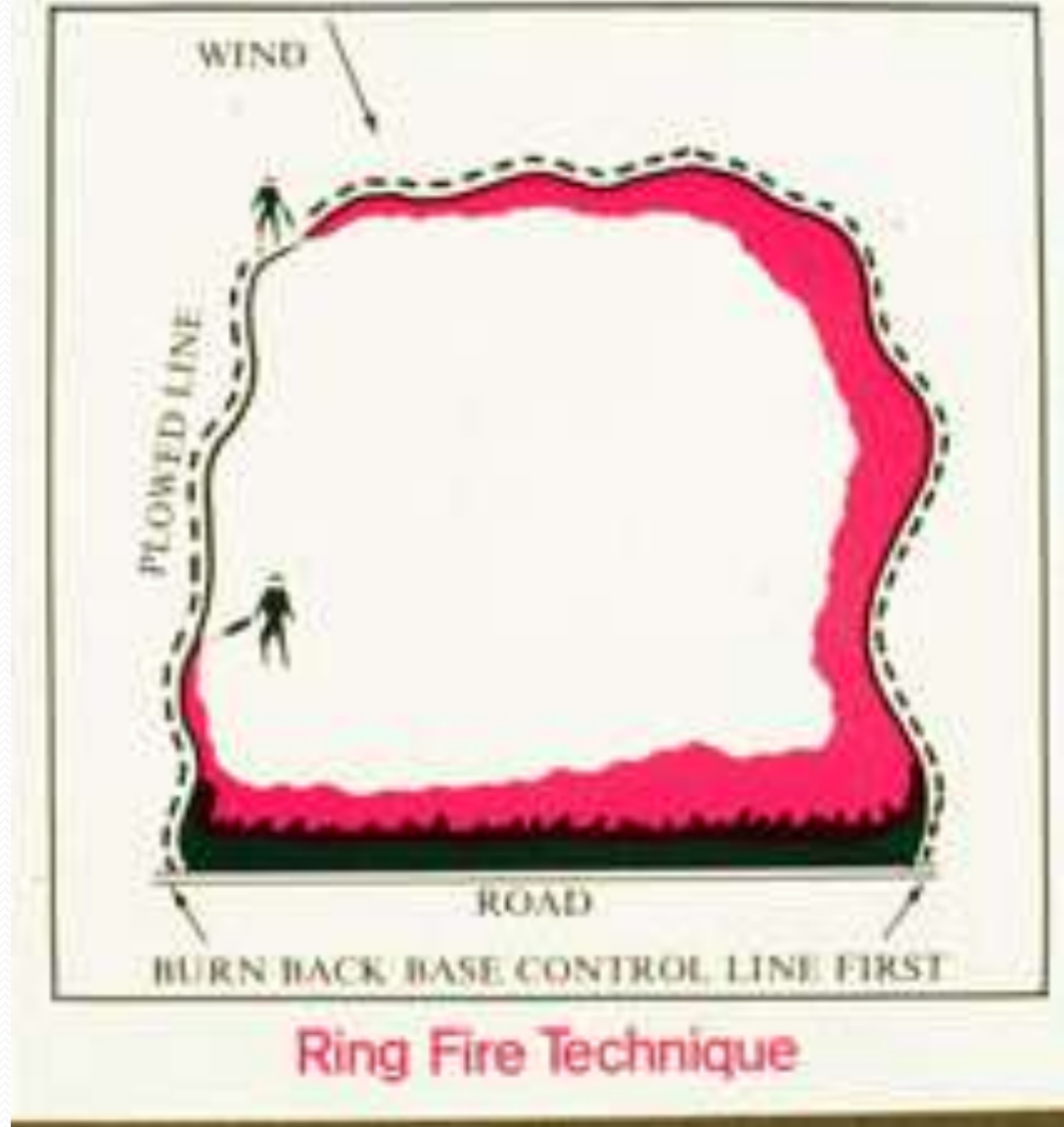
Site Preparation Burning

- Prescribed fire plan, plan ahead!
- Burning permit needed
- Environmental parameters
 - Wind
 - Temperature
 - Humidity
 - Moisture
 - Fuels
- Smoke management
 - Temperature inversions
 - Mixing height
 - Fuel conditions
- Certified Burner Program
- Backup



Ring Fire Technique

- Inexpensive, \$21-\$36 per acre¹
- Clears debris from harvest to facilitate planting, but not as well as mechanical
- Smoke liabilities are a concern
- Kills many wildlife species
- May be used in combination with herbicides or machinery



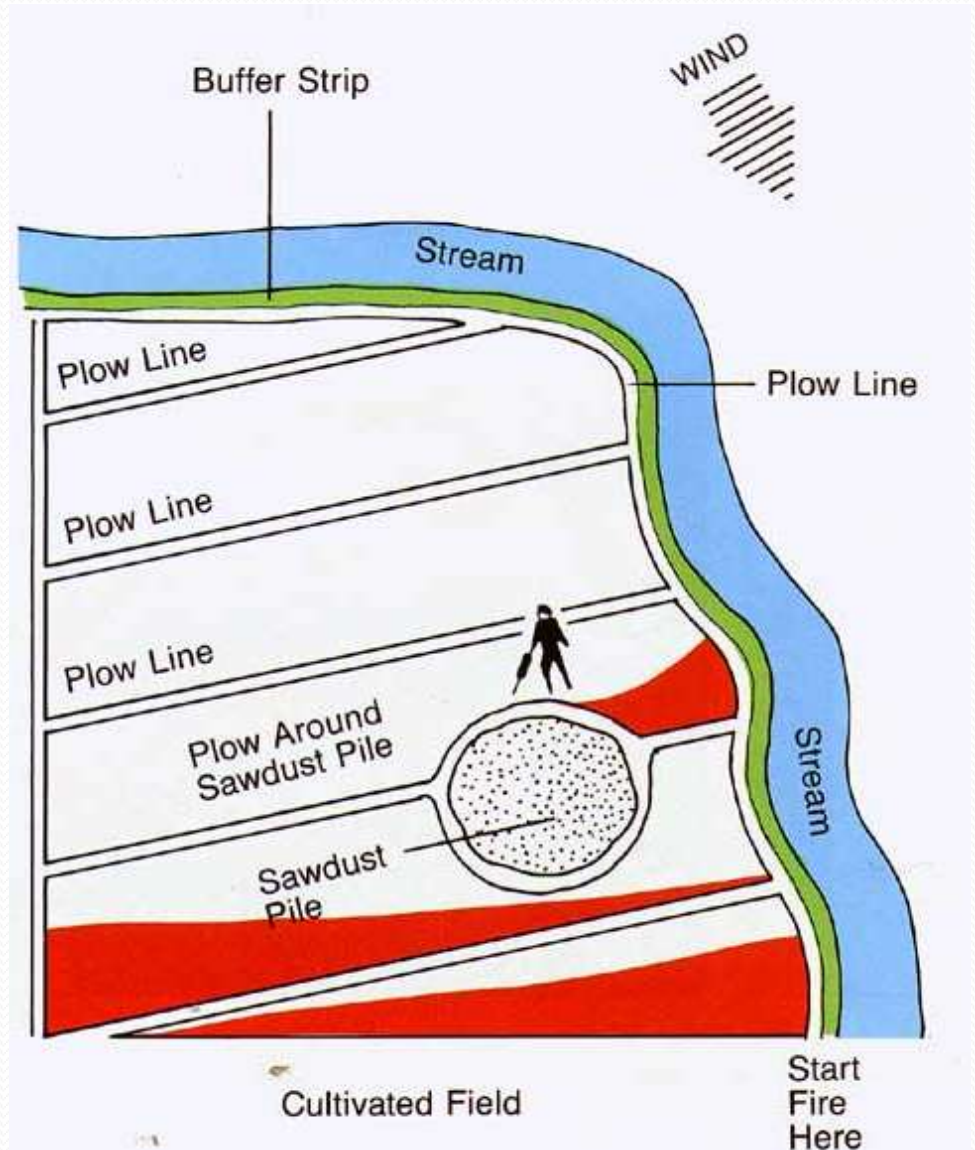
¹Barlow, et al. 2009. Forest Landowner Vol. 68, No. 5, 2008 prices reported

Strip Fires

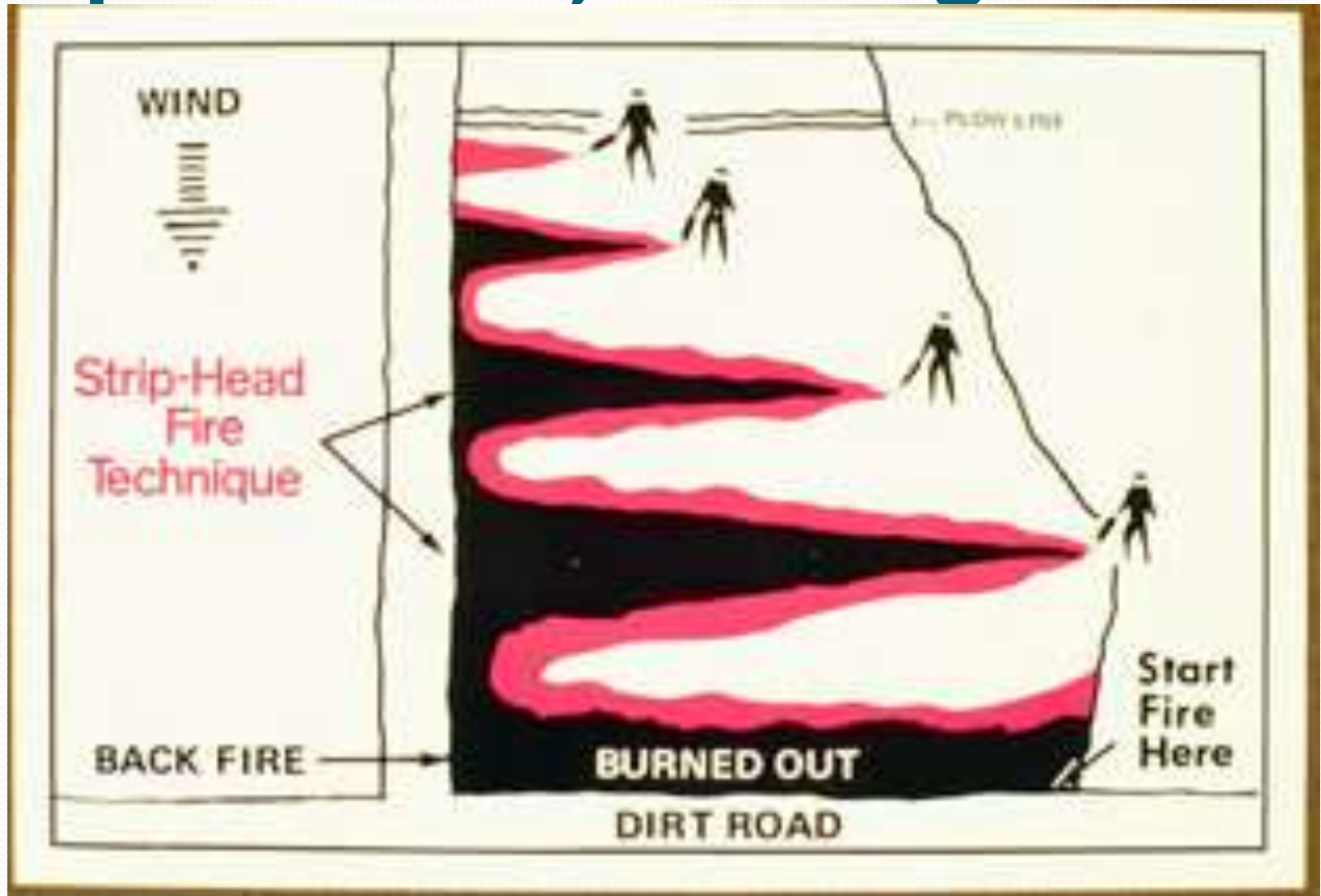


Progressive strip backfire technique

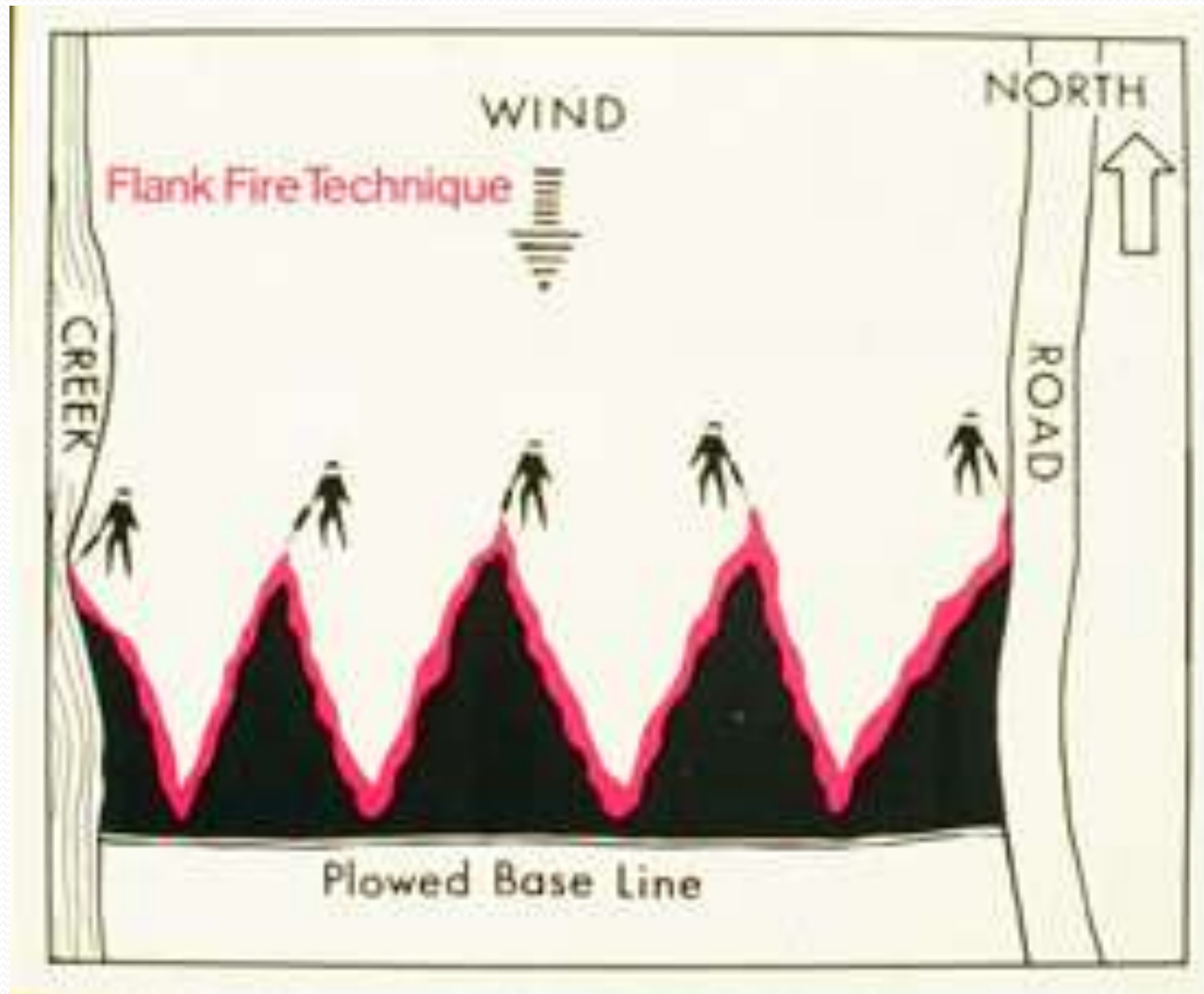
- Break burn area into adjacent blocks
- Plow lines between blocks
- Take advantage of natural fire breaks, streams, roads
- Backfire, move into the wind



Strip head fire, flanking fire



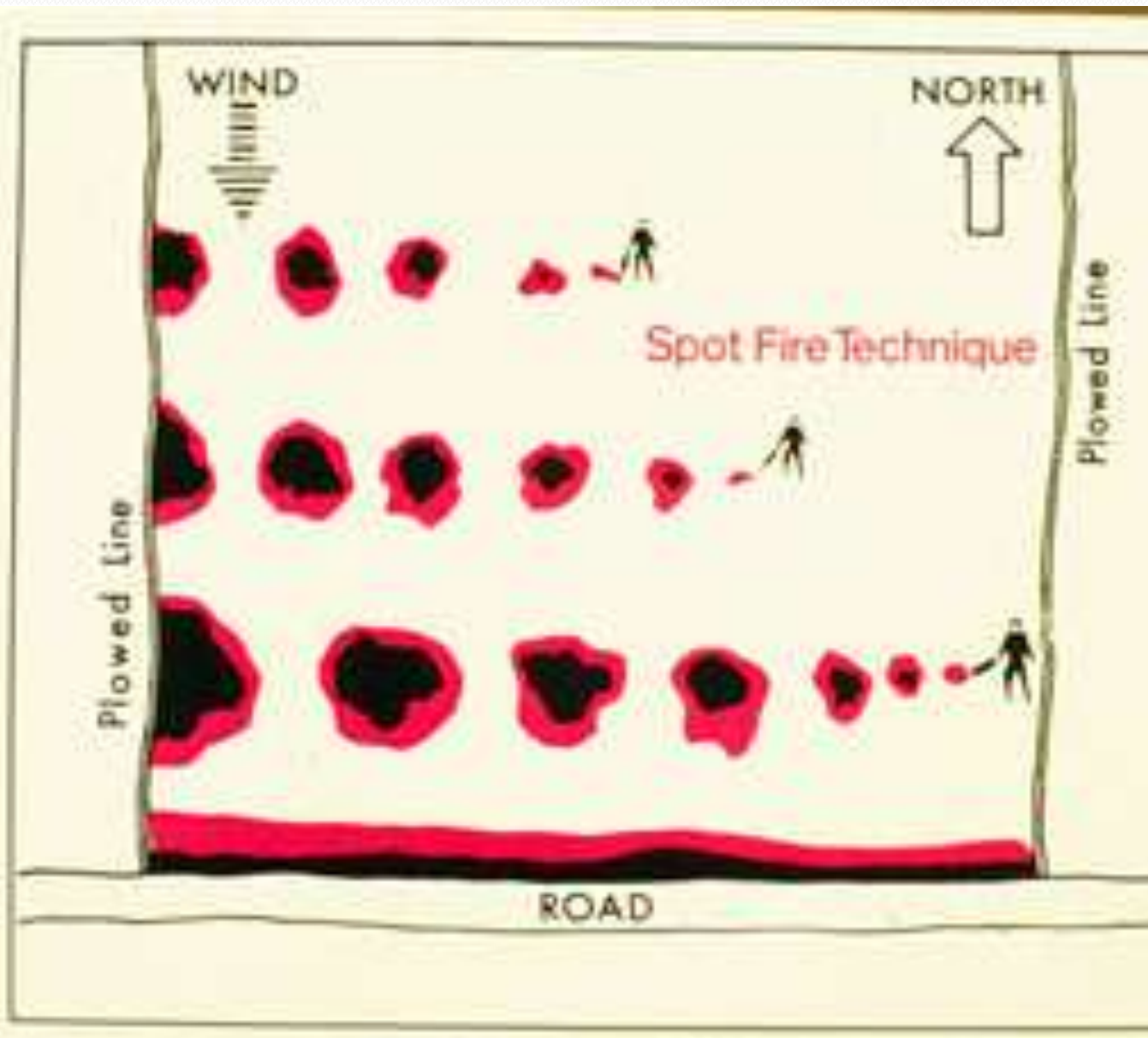
Flanking backfire



Spot fires, understory burns



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Mechanical Site Prep

- **Chopping, done with burning**
- **Dragging**
- **Shearing**
- **Root Raking, into piles or windrows**
- **Ripping**
- **Bedding**
- **Many various combinations of above!**

Chopping



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Dragging, chaining



Shearing



“Stinger”



Piling, “*pushing*”



V-blade Plow



Root Rake



Windrows

- Once common
- Provides good planting access
- Relatively fast
- Topsoil movement
- Soil compaction
- Windrow on contour, reduce erosion
- Burn in summer prior to planting
- Loss of growing space



UGA4799038

Burn windrows in summer



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Pine plantation following windrowing



Ripping, Sub-soiling

- Common in the Piedmont, clay soils
- Ameliorates soil compaction
- Allow several months, many rains, to allow soil to settle prior to planting



1-Pass Disking and Ripping



Bedding plow

- Done on poorly drained soils
- Improves soil structure
- Provides better aeration for seedlings – roots need air!



Savannah Plow



Savannah Plow



Flatwoods bedding following Shear-Pile

- One or two pass bedding
- Done in summer months to allow beds to settle prior to planting



Forming beds



Bedding Harrow



Average Costs of Common Treatments¹

• Single Chop	\$114
• Chop and Bed	\$114
• All other Single Pass	\$119
• Shear-Rake and Pile	\$171
• Shear-Rake, Pile and Bed	\$189
• Bedding	\$174
• All other Multi-Pass	\$191
• All Types of Mechanical	\$157

¹Barlow, et al. 2009, Forest Landowner Vol. 68, No. 5

Hydrology modification



Herbicide Terminology

- Know common and trade names
- Foliar or soil active
- Pre- Post-emergence
- Persistence
- Selectivity
- Toxicity
- Environmental Fate
- Mode of Action



Silvicultural Herbicide Uses

- Site Preparation
- Herbaceous Weed Control
- Pine Release
- Mid-rotation Release
- Pre-harvest Site Prep
- Timber Stand Improvement



Photo: Pat Minogue

Herbicide Site Preparation

“Get to the root of the problem”

- Manage brush and herbaceous weeds
- Options **with and without burning**
- Hand planting is typical
- Spring, summer, and fall treatment options
- Combined with mechanical treatments on poorly drained sites
- Costs \$32-66 per acre¹



Before



After

Site Prep Herbicides- Most Common

Common Name	Trade Name	Manufacturer
Glyphosate	Accord [®] XRT II, Accord [®] Conc. Razor [®] Pro, Foresters' [®]	Dow AgroSciences NuFarm
Hexazinone	Velpar [®] ULW, Velpar [®] L Pronone [®]	DuPont ProServe
Imazapyr	Chopper [®] Gen2, Arsenal [®] AC Polaris [®] AC	BASF NuFarm
Triclopyr	Garlon [®] 4 Ultra Tahoe [®] 4E	Dow AgroSciences NuFarm
Metsulfuron	Escort [®] XP	DuPont

Site Prep Herbicides- Less Common

Common Name	Trade Name	Manufacturer
2,4-D	Weedar[®] 64	Syngenta
Dicamba	Vanquish[®]	Syngenta
Fluroxypyr	Vista[®]	DowAgroSciences
Fosamine	Krenite[®]	DuPont
Glufosinate	Derringer[®]	Bayer

Most Common Site Prep Treatments

- Spring Site Prep with Velpar[®]
- Upland Foliar Sprays
- Flatwoods Foliar Sprays



Herbicide Site Preparation

Spring treatment with Velpar® (hexazinone)

- Ideal for *sandy soils, mostly oaks*
- Soil active herbicide, root uptake
- Requires rainfall to activate
- Enhanced growth with spring timing



Aerial



Ground

Herbicide Site Preparation

Foliar sprays in summer and early fall

- ***Upland sites:***

Broad species spectrum

40 oz **Chopper**[®] Gen 2

+ 3 qts **Accord**[®] XRT II

- ***Flatwoods:***

Gallberry, Saw palmetto

32 oz **Chopper**[®] Gen 2

+ 3 qts **Garlon**[®] 4 Ultra



Aerial

Ground



UGA0016294

Special Situations in Site Prep

- **Blackberry Control**

Add 1 ox **Escort[®] XP**



Jim Miller

Sand Blackberry

- **Pine Control**

Add 2-3 qts **Krenite[®]**



5 qts **Accord[®]** + 3 qts **Krenite[®]**

V-Blade Planting

Option for machine planting following chemical site prep



Photo: Pat Minogue

Pre-plant spraying on bedded sites

- Form beds on poorly drained sites in early summer.
- Spray pre+post-emergence herbicides at 6-12 weeks after bedding.
- 12-16 oz **Arsenal**[®] AC
OR 24-32 oz **Chopper**[®]
+ 2-3 oz **Oust**[®] XP is a common treatment.



Flatwoods sites are poorly drained, spodosols.

Herbaceous Weed Control

in newly established pine plantations



- Widely adopted in the 1980's
- **Spring** application (Feb.-May)
- **6-foot wide band** over rows
- Broadcast where rows are not present or have vines, tall weeds, difficult access
- Wait **at least 1 month** after planting for best tolerance

Sources of Additional Information

- **Southern Regional Extension Forestry:**
<http://www.sref.info/>



- **Integrated Forest Vegetation Management Website**
<http://ifvm.ufl.edu/>

Patrick J. Minogue, Ph.D., R.F.
Assistant Professor of Silviculture
North Florida Research and Education Center
Quincy, FL 32303 pminogue@ufl.edu

