

Longleaf Pine Decision Tree

1. Trees not present (Go to 2)
1. Trees present (Go to 5)
 2. Afforestation [Convert Crop/Pasture land to Longleaf Pine Cover Type] (Go to 3)
 2. Reforestation [Convert existing forest cover type to Longleaf Pine Cover Type] (Go to 4)
3. Establish Longleaf Pine post native vegetation establishment (Go to Tab 1)
3. Establish Longleaf Pine prior to native vegetation establishment (Go to Tab 2)
 4. Convert existing forest cover type by artificial regeneration (Go to Tab 3)
 4. Convert existing forest cover type by natural regeneration (Go to Tab 4)
5. Manage existing Longleaf Pine cover type (Go to Tab 5)
5. Manage existing mixed Longleaf Pine cover type or non-Longleaf Pine cover type (Go to Tab 6)

TAB 1
Establish Longleaf Pine Post Native Vegetation Establishment

- A. Construct Firebreak (CPS 394)
- B. Establish Native Vegetation CPS (327)
 - 1. Establish 2 to 3 native species
 - a. Apply pre-plant broadcast medium competition suppression treatment (CPS 314/315);
 - b. Mechanical seedbed preparation [consider Deep Tillage (CSP 324)];
 - c. Plant seed grain drill or broadcast and pack;
 - d. Second growing season treat unwanted vegetation, broadcast light or medium competition suppression treatment (CPS 314/315);
 - e. Prescribe burn (CPS 338), spring of third growing season.
 - 2. Establish 4 to 5 native species
 - a. Apply pre-plant broadcast medium competition suppression treatment (CPS 314/315);
 - b. Mechanical seedbed preparation [consider Deep Tillage (CSP)];
 - c. Plant seed (grain drill or broadcast and pack);
 - d. Second growing season treat unwanted vegetation, broadcast light or medium competition suppression treatment (CPS 314/315);
 - e. Prescribe burn (CPS 338), spring of third growing season.
- C. Establish Longleaf Pine
 - 1. Begin planning during the native grass second growing season
 - a. Determine planting density and seedling arrangement (row & seedling intervals)
 - 1) Density: 450 TPA ; Arrangement: 12 ft x 8 ft or 16 ft x 6 ft;
 - 2) Density: 340 TPA; Arrangement : 16 ft x 8 ft.
 - b. Determine seedling composition
 - 1) Longleaf Pine;
 - 2) Longleaf Pine plus compatible conifers;
 - 3) Longleaf Pine plus compatible hardwoods;
 - 4) Longleaf Pine plus compatible mixed conifer & hardwood.
 - c. Determine seedling stock type
 - 1) Container seedlings;
 - 2) Bare Root seedlings;
 - d. Order seedlings
 - 2. Establish seedlings during native grass third growing season
 - a. Apply pre-plant mid-summer light competition suppression as a 6 ft band along designated planting rows (CPS 490);
 - b. If root growth inhibition exists (> 140 psi), deep till along the center of the banded rows to a depth of 18 to 24 inches, when soil moisture is at wilting point or less (CSP 490);
 - c. Plant seedlings in center of the banded row (CSP 612)
 - 1) Container seedlings: post deep tillage from mid-October to mid March when soil moisture reaches field capacity, hand planting preferred;
 - 2) Bare root seedlings: post deep tillage from mid-December to mid-March when soil moisture reaches field capacity, machine or hand plant.
 - d. Apply single banded post-plant light competition suppression (CSP 666) between mid-March and mid-May;
 - e. During the seedling third growing season clip native vegetation between mid-August and mid-October;
- D. Future Stand Management (CPS 666)
 - a. In third growing season of pure longleaf stands; clip native vegetation within the planted row intervals between mid-August and mid-October and apply a prescribed burn (CPS 338) during the winter, when 80% of the seedlings exceed 3 feet in height; otherwise delay burn until the height criteria is achieved.
 - b. Do not clip or burn the composite (longleaf other species mix) stand until the fifth seedling growing season; then clip between mid-August and mid-October and follow with a winter prescribed burn (CPS 338);
 - c. In the sixth seedling growing season initiate a 2-3 year burning cycle with an early growing season burn and then develop a burning cycle that alternates among winter, early, mid and late growing season, and fall burns (CPS 338).

d. Plan appropriate intraspecific & interspecific competition release treatments (CPS 666) between ages 10 and 25.

TAB 2

Establish Longleaf Pine Prior to Native Vegetation Establishment

A. Construct Firebreak (CPS 394)

B. Establish Longleaf Pine (CPS 612)

1. Begin planning in January of the expected planting year

a. Determine planting density and seedling arrangement (row & seedling intervals)

1) Density: 450 TPA ; Arrangement: 12 ft x 8 ft or 16 ft x 6 ft;

2) Density: 340 TPA; Arrangement : 16 ft x 8 ft.

b. Determine seedling composition

1) Longleaf Pine;

2) Longleaf Pine plus compatible conifers;

3) Longleaf Pine plus compatible hardwoods;

4) Longleaf Pine plus compatible mixed conifer & hardwood.

c. Determine seedling stock type

1) Container seedlings;

2) Bare Root seedlings;

d. Order seedlings

2. Implement seedling planting process

a. Apply a broadcast pre-plant mid-summer light to medium competition suppression treatment (CPS 490);

b. If root growth inhibition exists (> 140 psi), deep till along designated planting rows to a depth of 18 to 24 inches, when soil moisture is at wilting point or less (CSP 490);

c. Plant seedlings along designated rows (CSP 612)

1) Container seedlings: post deep tillage from mid-October to mid March when soil moisture approaches field capacity, hand planting preferred;

2) Bare root seedlings: post deep tillage from mid-December to mid-March when soil moisture approaches field capacity, machine or hand plant.

d. Apply single post-plant light competition suppression (CSP 666) between mid-March and mid-May;

e. During the seedling third growing season clip existing vegetation within the planted row intervals between mid-August and mid-October and apply a light competition suppression treatment (CPS 314);

C. Establish Native Vegetation (CPS 327)

1. Establish 2 to 3 native species

a. Plant seed grain drill or broadcast and pack;

b. Second growing season treat unwanted vegetation, light or medium competition suppression treatment (CPS 314/315);

2. Establish 4 to 5 native species

a. Plant seed (grain drill or broadcast and pack);

b. Second growing season treat unwanted vegetation, light or medium competition suppression treatment (CPS 314/315);

D. Future Stand Management (CPS 666)

a. In the sixth growing season of pure longleaf stands; clip native vegetation within the planted row intervals between mid-August and mid-October and apply a prescribed burn (CPS 338) during the winter, when 80% of the seedlings exceed 3 feet in height; otherwise delay burn until the height criteria is achieved.

b. Do not clip or burn the composite (longleaf other species mix) stand until the eighth seedling growing season; then clip between mid-August and mid-October and follow with a winter prescribed burn (CPS 338);

c. In the ninth seedling growing season initiate a 2-3 year burning cycle with an early growing season burn and then develop a burning cycle that alternates among winter, early, mid and late growing season, and fall burns (CPS 338);

d. Plan appropriate intraspecific & interspecific competition release treatments (CPS 666) between ages 10 and 25.

TAB 3
Convert Existing Forest Cover Type by Artificial Regeneration

- A. Construct Firebreak (CPS 394)
- B. Establish Longleaf Pine (CPS 612)
 - 1. Plan and implement a clear cut regeneration harvest one year prior to the expected planting year;
 - 2. Begin planning regeneration process in January of the expected planting year;
 - a. Determine planting density and seedling arrangement (row & seedling intervals)
 - 1) Density: 450 TPA; Arrangement: 12 ft x 8 ft or 16 ft x 6 ft;
 - 2) Density: 340 TPA; Arrangement: 16 ft x 8 ft.
 - b. Determine seedling composition;
 - 1) Longleaf Pine;
 - 2) Longleaf Pine plus compatible conifers;
 - 3) Longleaf Pine plus compatible hardwoods;
 - 4) Longleaf Pine plus compatible mixed conifer & hardwood.
 - c. Determine seedling stock type;
 - 1) Container seedlings;
 - 2) Bare Root seedlings;
 - d. Order seedlings;
 - 3. Implement seedling planting process;
 - a) Disperse or consolidate regeneration harvest debris (CPS 490)
 - 1) Pile
 - 2) Windrow
 - 3) Planting row dispersal
 - 4) Prescribed Burn (CPS 338)
 - b. Apply a broadcast pre-plant mid-summer light to medium competition suppression treatment (CPS 490);
 - c. If root growth inhibition exists (> 140 psi), deep till along designated planting rows to a depth of 18 to 24 inches, when soil moisture is at wilting point or less (CSP 490);
 - d. Plant seedlings along designated rows (CSP 612)
 - 1) Container seedlings: post deep tillage from mid-October to mid March when soil moisture approaches field capacity, hand planting preferred;
 - 2) Bare root seedlings: post deep tillage from mid-December to mid-March when soil moisture approaches field capacity, machine or hand plant.
 - d. Apply single banded post-plant light competition suppression treatment (CSP 666) between mid-March and mid-May;
 - e. During the seedling third growing season clip existing vegetation within the planted row intervals between mid-August and mid-October and apply a light competition suppression treatment (CPS 314);
- C. Establish Native Vegetation (CPS 327) when necessary;
 - 1. Establish 2 to 3 native species
 - a. Plant seed grain drill or broadcast and pack;
 - b. Second growing season treat unwanted vegetation, light or medium competition (CPS 314/315);
 - 2. Establish 4 to 5 native species
 - a. Plant seed (grain drill or broadcast and pack);
 - b. Second growing season treat unwanted vegetation, light or medium competition (CPS 314/315);
- D. Future Stand Management (CPS 666)
 - a. In sixth growing season of pure longleaf stands; clip native vegetation within the planted row intervals between mid-August and mid-October and apply a prescribed burn (CPS 338) during the winter, when 80% of the seedlings exceed 3 feet in height; otherwise delay burn until the height criteria is achieved.
 - b. Do not clip or burn the composite (longleaf other species mix) stand until the eighth seedling growing season; then clip between mid-August and mid-October and follow with a winter prescribed burn.

- c. In the ninth seedling growing season initiate a 2-3 year burning cycle with an early growing season burn and then develop a burning cycle that alternates among winter, early, mid and late growing season, and fall burns (CPS 338);
- d. Plan appropriate intraspecific & interspecific competition release treatments (CPS 666) between ages 10 and 25.

TAB 4

Convert Existing Forest Cover Type by Natural Regeneration

- A. Construct Firebreak (CPS 394)
- B. Establish Longleaf Pine, Longleaf pine seed source available (CPS 612)
 - 1. Plan and implement a reproduction method silvicultural system;
 - a. Seed-Tree Method
 - b. Shelterwood Method
 - c. Selection Method
 - 1) Single tree selection
 - 2) Group selection
 - 2. Plan and implement harvest to create the desired overstory composition and stocking density;
 - a. Residual stand composition
 - 1) Predominantly longleaf pine;
 - 2) Longleaf Pine plus compatible mixed conifer & hardwood.
 - b. Residual stocking density;
 - 1) Less than age 12 – 200 to 300 overstory trees per acre;
 - 2) Age 13 to age 20 – 100 trees per acre or basal area less than 60 ft² per acre;
 - 3) Greater than age 20 – 10 to 50 trees per acre or basal area between 20 & 50 ft²;
 - c. Prior to anticipated longleaf seed fall, apply a broadcast pre-plant mid-summer light to medium competition suppression treatment (CPS 490);
 - d. Following the competition suppression treatment, initiate a biennial prescribed burning cycle of winter burns (CPS 338) until adequate regeneration is established (approximately 300 evenly spaced seedlings per acre);
- C. Establish Native Vegetation (CPS 327) when necessary;
 - 1. Establish 2 to 3 native species
 - a. Plant seed grain drill or broadcast and pack;
 - b. Second growing season treat unwanted vegetation, light or medium competition (CPS 314/315);
 - 2. Establish 4 to 5 native species
 - a. Plant seed (grain drill or broadcast and pack);
 - b. Second growing season treat unwanted vegetation, light or medium competition (CPS 314/315);
- D. Future Stand Management (CPS 666)
 - a. When 80% of the seedlings exceed 3 feet in height initiate a 2-3 year burning cycle with an early growing season burn and then develop a burning cycle that alternates among winter, early, mid and late growing season, and fall burns;
 - d. Plan appropriate intraspecific & interspecific competition release treatments (CPS 666) between ages 5 and 25. A pre-commercial thinning may be applied to reduce seedlings 300 trees per acre.

TAB 5

Manage Existing Longleaf Pine Cover Type

A. Construct Firebreak (CPS 394)

B. Longleaf Pine Stand Age (CPS 666)

1. Seedling age stand (age 1 – age 5);
 - a. Reduce seedling stocking to 300 TPA, precommercial thinning (CPS 666);
 - b. Apply light to medium competition suppression treatment, if needed for unwanted vegetation removal;
 - c. When 80% of the seedlings exceed 3 feet in height initiate a 2-3 year burning cycle with an early growing season burn and then develop a burning cycle that alternates among winter, early, mid and late growing season, and fall burns;
 - d. Plan appropriate intraspecific & interspecific competition release treatments (CPS 666) between ages 10 and 25.
2. Sapling age stand (age 6 to age 12);
 - a. Reduce tree stocking to 200 TPA, commercial thinning (CPS 666);
 - b. Apply light to medium competition suppression treatment, if needed for unwanted vegetation removal;
 - c. Following tree stocking reduction and unwanted vegetation suppression, initiate a 2-3 year burning cycle with an early growing season burn and then develop a cycle that alternates among winter, early, mid and late growing season, and fall burns;
 - d. Plan appropriate intraspecific & interspecific competition release treatments (CPS 666) between ages 12 through the anticipated rotation age;
3. Maturing age stand (age 13 to age 25);
 - a. Reduce tree stocking to 100 TPA or a basal area of 60 ft² or less, commercial thinning (CPS 666);
 - b. Apply light to medium competition suppression treatment, if needed for unwanted vegetation removal;
 - c. Following tree stocking reduction and unwanted vegetation suppression, initiate a 2-3 year burning cycle with an early growing season burn and then develop a cycle that alternates among winter, early, mid and late growing season, and fall burns;
 - d. Plan appropriate intraspecific & interspecific competition release treatments (CPS 666) between ages 25 through the anticipated rotation age;
4. Mature age stand (age 26 to Rotation Age);
 - a. Maintain tree stocking at a basal area of 60 ft² or less, commercial thinning (CPS 666);
 - b. Apply light to medium competition suppression treatment, if needed for unwanted vegetation removal;
 - c. Following tree stocking reduction and unwanted vegetation suppression, initiate a 2-3 year burning cycle with an early growing season burn and then develop a cycle that alternates among winter, early, mid and late growing season, and fall burns;
 - d. Plan appropriate intraspecific & interspecific competition release treatments (CPS 666) between ages 26 through the anticipated rotation age and plan reforestation activities;

C. Establish Native Vegetation (CPS 327) when necessary;

1. Establish 2 to 3 native species
 - a. Plant seed grain drill or broadcast and pack;
 - b. Second growing season treat unwanted vegetation, light or medium competition (CPS 314/315);
2. Establish 4 to 5 native species
 - a. Plant seed (grain drill or broadcast and pack);
 - b. Second growing season treat unwanted vegetation, light or medium competition (CPS 314/315);

TAB 6

Manage Existing Mixed Longleaf Pine Cover Type or non-Longleaf Pine Cover Type

- A. Construct Firebreak (CPS 394)
- B. Convert mixed longleaf and non-longleaf pine cover types to a longleaf cover type by age 25
- C. Longleaf Pine Stand Age (CPS 666)
 - 1. Seedling age stand (age 1 – age 5);
 - a. Reduce seedling stocking to 300 TPA and alter species composition, precommercial thinning (CPS 666);
 - b. Apply light to medium competition suppression treatment, if needed for unwanted vegetation removal;
 - c. When 80% of the seedlings exceed 3 feet in height initiate a 2-3 year burning cycle with an early growing season burn and then develop a burning cycle that alternates among winter, early, mid and late growing season, and fall burns;
 - d. Plan appropriate intraspecific & interspecific competition release treatments (CPS 666) between ages 10 and 25 necessary to achieve longleaf pine conversion.
 - 2. Sapling age stand (age 6 to age 12);
 - a. Reduce tree stocking to 200 TPA and alter species composition, commercial thinning (CPS 666);
 - b. Apply light to medium competition suppression treatment, if needed for unwanted vegetation removal;
 - c. Following tree stocking reduction and unwanted vegetation suppression, initiate a 2-3 year burning cycle with an early growing season burn and then develop a cycle that alternates among winter, early, mid and late growing season, and fall burns;
 - d. Plan appropriate intraspecific & interspecific competition release treatments (CPS 666) between ages 12 through the anticipated rotation age, and continue the longleaf pine conversion process;
 - 3. Maturing age stand (age 13 to age 25);
 - a. Reduce tree stocking to 100 TPA or a basal area of 60 ft² or less and alter species composition, commercial thinning (CPS 666);
 - b. Apply light to medium competition suppression treatment, if needed for unwanted vegetation removal;
 - c. Following tree stocking reduction and unwanted vegetation suppression, initiate a 2-3 year burning cycle with an early growing season burn and then develop a cycle that alternates among winter, early, mid and late growing season, and fall burns;
 - d. Plan appropriate intraspecific & interspecific competition release treatments (CPS 666) between ages 25 through the anticipated rotation age and the longleaf pine conversion process;
 - 4. Mature age stand (age 26 to Rotation Age);
 - a. Maintain tree stocking at a basal area of 60 ft² or less and sustain species composition, commercial thinning (CPS 666);
 - b. Apply light to medium competition suppression treatment, if needed for unwanted vegetation removal;
 - c. Following tree stocking reduction and unwanted vegetation suppression, initiate a 2-3 year burning cycle with an early growing season burn and then develop a cycle that alternates among winter, early, mid and late growing season, and fall burns;
 - d. Plan appropriate intraspecific & interspecific competition release treatments (CPS 666) between ages 26 through the anticipated rotation age and plan reforestation activities;
- C. Establish Native Vegetation (CPS 327) when necessary;
 - 1. Establish 2 to 3 native species
 - a. Plant seed grain drill or broadcast and pack;
 - b. Second growing season treat unwanted vegetation, light or medium competition (CPS 314/315);
 - 2. Establish 4 to 5 native species
 - a. Plant seed (grain drill or broadcast and pack);
 - b. Second growing season treat unwanted vegetation, light or medium competition (CPS 314/315);