Use of Herbicides to Improve Wildlife Habitat

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Overall goal is a forest like this
We can use herbicides to:

- Ensure survival
- Control of plants with little wildlife value
- Favor desirable plants
- Create snags
But there are consequences to herbicides use.

Negative effects

- Control or elimination of valuable or desirable plants
  - Grasses for burning
  - Many seed producers
- Residual activity which might hamper re-establishment of desirable plants

Photo courtesy of TNC
We can use herbicides to get to our restoration goal. But, the foothold gained must be maintained, usually with fire.

- Control loblolly
- Control hardwoods
- Stimulate grasses and herbs
Lot’s of things determine which plants are killed and which are not.

- Herbicide
- Rate
- Mode of action
- Season

- Method
- Adjuvants
- Plant physiology
- Weather
We can SELECT the HERBICIDE to target what we want we don’t want

- Glyphosate
- Imazapyr
- Triclopyr
- Hexazinone
- Sulfometuron
- Metsulfuron
- 2, 4-D
We can SELECT the HERBICIDE to target what we want we don’t want

But it's just as important to know what your Herbicide DOESN'T kill

2, 4-D
<table>
<thead>
<tr>
<th>Species</th>
<th>Hexazinone</th>
<th>Triclopyr</th>
<th>Imazapic</th>
<th>Glyphosate</th>
<th>Metosulfuron</th>
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<tr>
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<tr>
<td>Legumes</td>
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Longleaf is one of the most diverse ecosystem in the world. Second only to rainforest in species richness
Grasses are important fuel source

- Wiregrass
- Little bluestem
- Indian grass
- Toothache grass
- Big bluestem
Native warm season grasses are tolerant to Hexazinone or Triclopyr
An overlooked treasure - blueberries and huckleberries

- Gamebirds: Bobwhite quail, wild turkey, and ruffed grouse
- Squirrels (fruit) and Deer (browse leaves)
Hexazinone spares blueberries and huckleberries

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- Squirrels (fruit) and Deer (browse leaves)
Native lespedezas & Legumes

• “Likely the most important N. Bobwhite seed producers in the SE.”
• Deer: “Some species are preferred forage, others less so.”
Native lespedezas & Legumes are tolerant of imazapyr and hexazinone

• “Likely the most important N. Bobwhite seed producers in the SE.”
• Deer: “Some species are preferred forage, others less so.”
Blackberries and dewberries….More than a thorn in your side

“Collectively, the various species of Rubus arguably are the most important group of plants for wildlife in the southeast.” Miller & Miller

“Users include more than 100 species of songbirds, game birds, and game mammals. Leaves…a most-important source of browse for deer & rabbits.” Kammermeyer & Thackston
Blackberries and dewberries are tolerant of Imazapry

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Scrub oaks are natural components of upland longleaf ecosystems

Post oak
- sand post, post oak, turkey, bluejack, blackjack, sand live, southern red, etc.
- share similar fire adaptations
- Acorns are energy rich
- Fox squirrels, deer, turkeys
- facilitate LL natural regeneration establishment

Blackjack oaks
Oust and Escort spare oaks

- Acorns readily used by deer, turkey, black bear, squirrel, and numerous other wildlife species.
- Runner oak acorns are available before most other tree oaks.
Beauty Berry

- Songbirds: Consumed by more than 40 species!
- Deer: Moderate browse preference
- Other: Bobwhite quail, raccoons and opossums

Callicarpa americana, American beauty berry
Beauty Berry is tolerant of hexazinone

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- Deer: Moderate browse preference
- Other: Bobwhite quail, raccoons and opossums

Callicarpa americana, American beauty berry
Wild Plum are important soft mast producers

- Quail: excellent escape and nesting cover
- Songbirds – Several including: mockingbird, brown thrasher, and gray catbird
- Also: deer, black bear, gray fox, raccoon, and opossum
Wild Plum is tolerant of Triclopyr, Glyphosate

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• Songbirds – Several including: mockingbird, brown thrasher, and gray catbird
• Also: deer, black bear, gray fox, raccoon, and opossum
Ragweed Wildlife Use
There is no shame in weedy food plots. Ragweed and many other “weeds” provide good wildlife food and cover

• Important seed and cover-producing plants for Bobwhite Quail
• Seeds readily consumed by numerous songbirds
• Important browse for deer
We can SELECT the APPLICATION METHOD to target what we want we don’t want

• Hand-held Techniques
  • Backpack Foliar
  • Basal Stem
  • Hack & Squirt
  • Cut Stump
  • Soil Spot
Backpack Foliar Spray or Basal Stem

• A late September or early October with Garlon 4 will control woody shrubs while sparing dormant grasses and forbs

• Common Herbicides:
  • Arsenal® AC, Chopper®
  • Garlon® 4, Garlon® 3A
  • Accord® XRT
Cut Stump

• Best done during active growth-
  • June 1 – Nov 1
• Prevents reprouting

  • Chopper®, Stalker®
  • Garlon® 4 Ultra (ester),
  • Garlon® 3A (amine)
  • Pathfinder® II (RTU)
  • Accord® XRT II
Hack & Squirt (Cut Stem)

• Best done during active growth -
  • June 1 – Nov 1
• Easy but labor intensive

• Common Herbicides:
  • Arsenal® AC
  • Garlon® 3A
  • Weedar® 64 (2,4-D)
Site Preparation

North Carolina Forest Service
To protect, manage, and promote forest resources for the citizens of North Carolina
At a glance

• Imazapyr
  • heavy texture soils, sweetgum, water and willow oak, controls most grasses, including bermuda, blueberries;
  • easy on legumes, blackberries

• Glyphosate
  • broad spectrum, most grasses and herbaceous

• Triclopyr
  • waxy leaf species,
  • easier on grasses and herbaceous layer

• Hexazinone
  • Oaks, legumes, sweetgum;
  • easy on wiregrass, blueberry, huckleberry, some legumes

• Oust and Escort
  • most broadleaves and grasses;
  • easy on broomsedge, woody plants
Typical NC site prep

48 oz. Chopper
5 quarts Accord
7 oz. Milestone or Detail
21 oz. Garlon XRT
1-2 oz. Escort
A new “plant friendlier” Site Prep

48 oz. Garlon XRT + 2 oz. Metsulfuron

- 73% survival – Plum Creek
- 85% survival – Hughes tract
- 45% survival – Fall Line WMA
- 93% survival – Flint River

- Imazapyr
  - 88% survival – Brown Tract
  - 70% survival – Catchmark tract
**Wildlife Friendly**

<table>
<thead>
<tr>
<th>Plants beneficial to wildlife</th>
<th>Tolerant to:</th>
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<tbody>
<tr>
<td>• Warm Season grasses- ---</td>
<td>• Hexazinone, Triclopyr</td>
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<tr>
<td>• Blueberries, huckleberries</td>
<td>• Hexazinone</td>
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<tr>
<td>• Lespedeza</td>
<td>• Hexazinone, Imazapyr</td>
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<td>• Blackberries, dewberries</td>
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<tr>
<td>• Beauty Berry</td>
<td>• Hexazinone</td>
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<tr>
<td>• Oaks</td>
<td>• Oust, Escort</td>
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</tbody>
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In summary:

- Know the plants you want to favor
- Know the plants you want to control
- Select the best herbicide
- Select the best application method
- Choose the appropriate time of year to apply your treatment
- Use the right rate
- Follow the label!
QUESTIONS??

.....or Comments