

Indiana Department of Natural Resources
Division of Forestry
DRAFT
RESOURCE MANAGEMENT GUIDE

State Forest: **Yellowwood**

Tract Acreage: **102**

Foresters: **A. Zillmer & M. Spalding**

Management Cycle End Year: **2029**

Compartment: **15** Tract: **05**

Commercial Forest Acreage: **102**

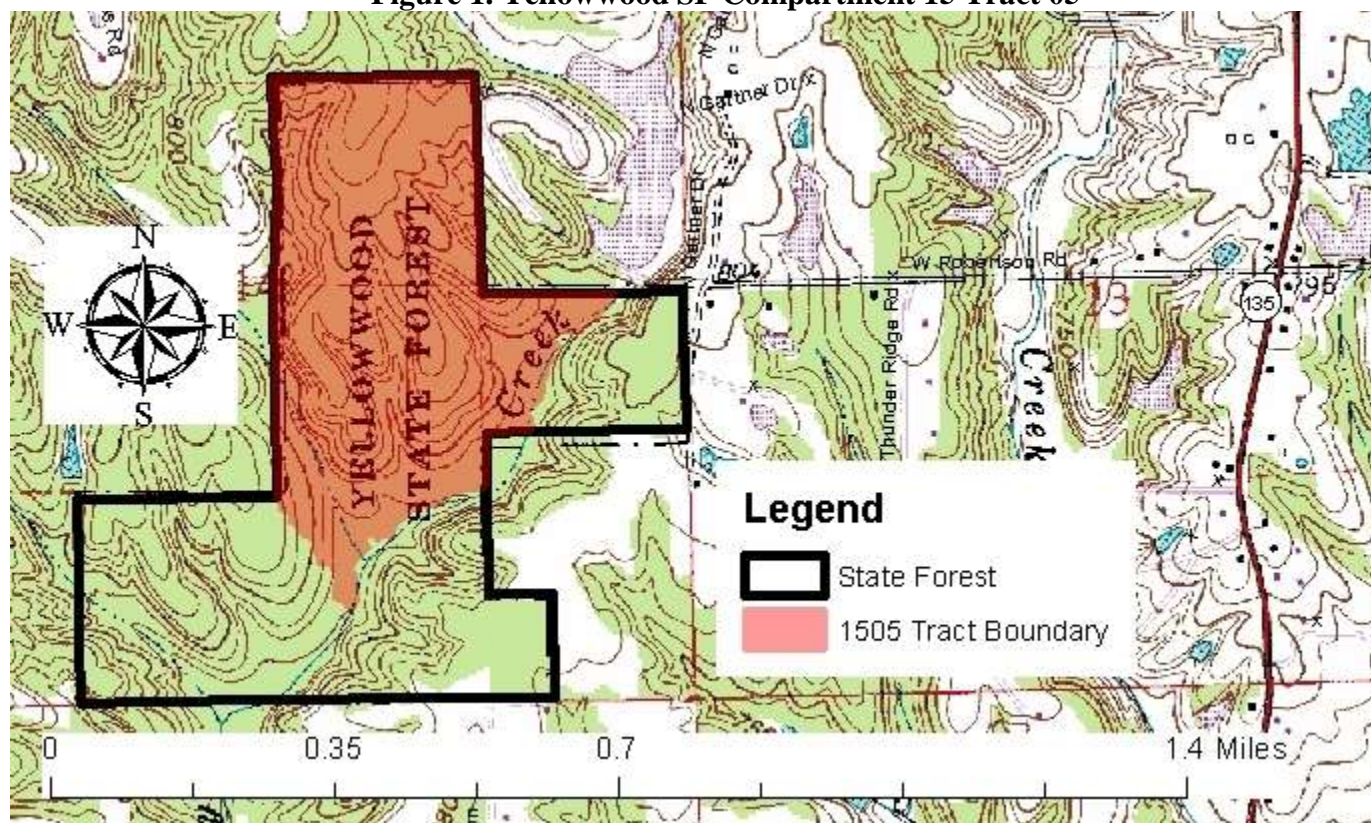
Date: **June 27, 2009**; Revision: **December 1, 2014**

Management Cycle Length: **15 years**

Location

Y1505 is located in Section 14, T10N, R2E of Brown County. The tract is located approximately 3 miles northwest of the community of Bean Blossom and 3 miles northeast of Helmsburg.

Figure 1. Yellowwood SF Compartment 15 Tract 05



General Description

Y1505 is comprised of the following timber types: Oak-Hickory, Mixed Hardwoods, and Virginia Pine. Oak-Hickory is the most the dominant cover type followed by Mixed Hardwoods and mall pockets of Virginia Pine. The forest resource ranges from pole to large sawtimber in size. The overall timber quality of Y1505 is average to good. The tract contains 102 acres. A summary of the forest timber resource of Y1505 in relation to species dominance is noted below in Table 1.

Table 1. Species composition from the April 2008 inventory in Y1505

Overstory Sawtimber Layer	Understory Poletimber Layer	Regeneration Layer
Red Maple White Oak Black Oak Virginia Pine American beech Yellow Poplar <i>Scarlet Oak</i> <i>Sugar Maple</i> <i>Largetooth Aspen</i> <i>White Ash</i> <i>Bitternut Hickory</i> <i>Sassafras</i> <i>Black Cherry</i> <i>American Sycamore</i> <i>Black Walnut</i> <i>Northern Red Oak</i> <i>Pignut Hickory</i> <i>Red Elm</i> <i>Blackgum</i> <i>Shagbark Hickory</i> <i>Pin Oak</i>	Red Maple Sugar Maple Blackgum Sassafras <i>American Beech</i> <i>Red Elm</i> <i>Largetooth Aspen</i> <i>Pignut Hickory</i> <i>Black Cherry</i> <i>Bitternut Hickory</i> <i>White Oak</i> <i>White Ash</i> <i>Black Walnut</i> <i>Virginia Pine</i> <i>Scarlet Oak</i> <i>American Sycamore</i> <i>Yellow Poplar</i> <i>Northern Red Oak</i> <i>Chestnut Oak</i>	Sugar Maple American Beech Red Maple Red Elm <i>Blackgum</i> <i>Black Cherry</i> <i>White Ash</i> <i>Sassafras</i>

Species listed as to dominance by number of stems. Bold represent the most dominant in each class.

History

Y1505 is part of an outlying block of land deeded by the United States Government in 1954 to Yellowwood State Forest. Historical aerial photography suggests that prior to government acquisition the valleys and ridgetops were farmed and the side slopes likely to have been grazed. The last timber harvest in this tract occurred in 1979.

- 1930's to 1950's – Open fields planted to pine.
- Summer, 1979 - First forest resource inventory and management guide prepared by Forester Bill Fischer.
- Fall, 1979 - Harvest marking by Forester Bill Fischer completed.
- 10-26-79 - Timber sale of 48,591 BF in 132 trees sold to Foley Hardwoods for \$11,813.
- 1980 - Post harvest timber sale audit overseen by Forester Al Royer & DOF personnel.
- 01-29-82 – Postharvest TSI completed by YSF crew.
- 04-8-08 - Forest resource inventory completed by Forester Amy Zillmer.
- 06-27-08 –Management Guide completed by Forester A. Zillmer.
- 5-5-11 – Tract boundary was corrected due to placement error of stream on topographical map. This increased the tract acreage from 92 to 102 acres. Because the inventory was done prior to this change, all data represents the 92 acres.

Landscape Context

The landscape surrounding Y1505 contains much variability due to this tract located in a small outholding compartment of Yellowwood State Forest. There are numerous residences in the immediate landscape with many located around Lake LaSalle to the northeast of the tract. Due to the more gentle topography found in this area, row crop agriculture fields are also more common than in much of Yellowwood. The largest intact block of forest in this fragmented landscape is Compartment 15. Also due to the large amount of private ownership, there are many small private ponds and lakes. The greatest threats to forestland in this landscape will continue to be forest degradation and loss due to clearing of residential home construction and the invasive plants that are routinely introduced during home landscaping efforts.

Topography, Geology and Hydrology

Y1505 has one main ridge that extends from the north and breaks into three finger ridges, grading downward toward Dunnaway Creek in the southeast. The ridge's slopes range from gentle on the ridgetop to steeper on the sideslopes. The underlying geology of this tract is a combination of sandstone, siltstone, and shale. Dunnaway Creek flows southwest and serves as an outlet for an unnamed privately owned lake located northeast of the tract. Several ephemeral drainages along the tract's ridges also drain into Dunnaway Creek. The tract's two intermittent streams converge at the south end of the tract to form a perennial stream. The one on the east tract boundary is Dunnaway Creek.

Soils

Be- Beanblossom channery silt loam, occasionally flooded (17.2 acres)

This nearly level and gentle sloping, deep, moderately well drained soil is on flood plains, alluvial fans, and colluvial benches. It is fairly well suited to trees. Wet periods contribute to equipment limitations. Rooting depth is somewhat restricted for some trees, i.e. Black Walnut, due to coarse fragments in subsoil. This soil has a site index of 95 for yellow poplar.

CnC2- Cincinnati silt loam, 6 to 12 percent slopes, eroded (30.6 acres)

This moderately sloping, deep, well drained soil is on ridgetop and side slopes in the uplands. It is fairly well suited to trees. This soil has a site index of 80 for northern red oak.

BgF- Berks-Trevlac-Wellston complex, 20 to 70 percent slopes (4.6 acres)

These moderately steep to very steep well drained soils are on hillsides in the uplands. They are fairly well suited to trees. Erosion hazards and equipment limitations are main management concerns due to slope. Consideration should be given during sale planning and implementation of Best Management Practices for Water Quality. This complex has a site index of about 70 for northern red oak.

HkF- Hickory silt loam, 20 to 70 percent slopes (49.0 acres)

This moderately steep to very steep, deep, well drained soil is on side slopes in the uplands. It is well suited to trees. Erosion hazards and equipment limitations are main management concerns due to slopes. Consideration should be given during sale planning and implementation of Best Management Practices for Water Quality. This soil has a site index of 85 for white oak and 95 for yellow poplar.

WeC2- Wellston-Gilpin silt loams, 6 to 20 percent slopes, eroded (.3 acre)

These moderately sloping to moderately steep, well drained soils are on sideslopes and ridgetops in the uplands. They are well suited to trees. This complex has a site index for northern red oak of 71 in the Wellston and 80 in the Gilpin.

Access

Public and forest management access is available through the adjacent Y1501 access which is West Robertson Road. From Nashville at the intersection of State Road 135 North and State Road 46 travel north 8.0 miles to West Robertson Road. From Morgantown at the intersection of State Road 252 and State Road 135 in Morgantown, travel south 5.0 miles on State Road 135 to West Robertson Road. Travel West on Robertson Road ¾ mile to a 90 degree turn to the left. This is the northeast corner of Tract 1501, and the entrance to this tract is about .1 mile to the south of this turn. Using this access for management purposes through Tract 1 would require using a timber bridge to cross a straight, flat part of Dunnaway Creek. This crossing would need to be stabilized with seed and straw following its use. Management access for the last timber harvest in 1979 was obtained through the adjacent landowner to the northeast. That access is an option would require an easement to be obtained through the private ownership.

Boundary

The west, north, and southeastern boundaries of Y1505 consist of private property lines. These lines have been marked in orange paint for many years and are clearly defined with corners carsonited. The southern boundary separates the tract from other State Forest adjacent landholdings. The south boundary is formed from the intersection of an intermittent drainage from the northwest and the intermittent stream known as Dunnaway Creek.

Wildlife

Wildlife resources in Y1505 are abundant. This tract contains habitat suitable for a wide variety of wildlife species. The tract currently consists of mostly closed canopy Oak-Hickory forest along with Mixed Hardwood forest and Pine plantations. Areas of similar habitat containing Oak-Hickory, Mixed Hardwoods and Pine forest are contained in adjacent Yellowwood SF tracts. These tracts combined together provide abundant wildlife food resources that include soft and hard mast.

A Natural Heritage Database Review was completed for Y1505 in 2014. If Rare, Threatened or Endangered species (RTE's) were identified for this tract, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

The Division of Forestry has instituted procedures for conducting forest resource inventories so that the documentation and analysis of live tree and snag tree densities are examined on a compartment and tract level basis in order to maintain long-term and quality forest habitats. Crown release performed during the planned timber harvest will stimulate the growth and vigor of the selected residual trees. Timber Stand Improvement (TSI) following the harvest is planned which will increase standing snag counts. Management practices will be conducted in a manner that will maintain the long-term and quality forest habitats for wildlife populations.

Recreation

There are no established recreational facilities located in this tract. Common recreational uses arising from adjacent private holdings in the surrounding area include hunting, hiking, and wildlife viewing.

Cultural Resources

All portions of Y1505 were reviewed for cultural sites during the forest resource inventory. Cultural resources may be present on Y1505 but their location(s) are protected. Adverse impacts to significant cultural resources will be avoided during any management or construction activities.

Tract Subdivision Description and Silvicultural Prescription

The overall stand structure for Y1505 is represented in the following Gingrich Stand and Stock Table (Table 2) that follows the individual Tract Summary.

Tract Summary Data

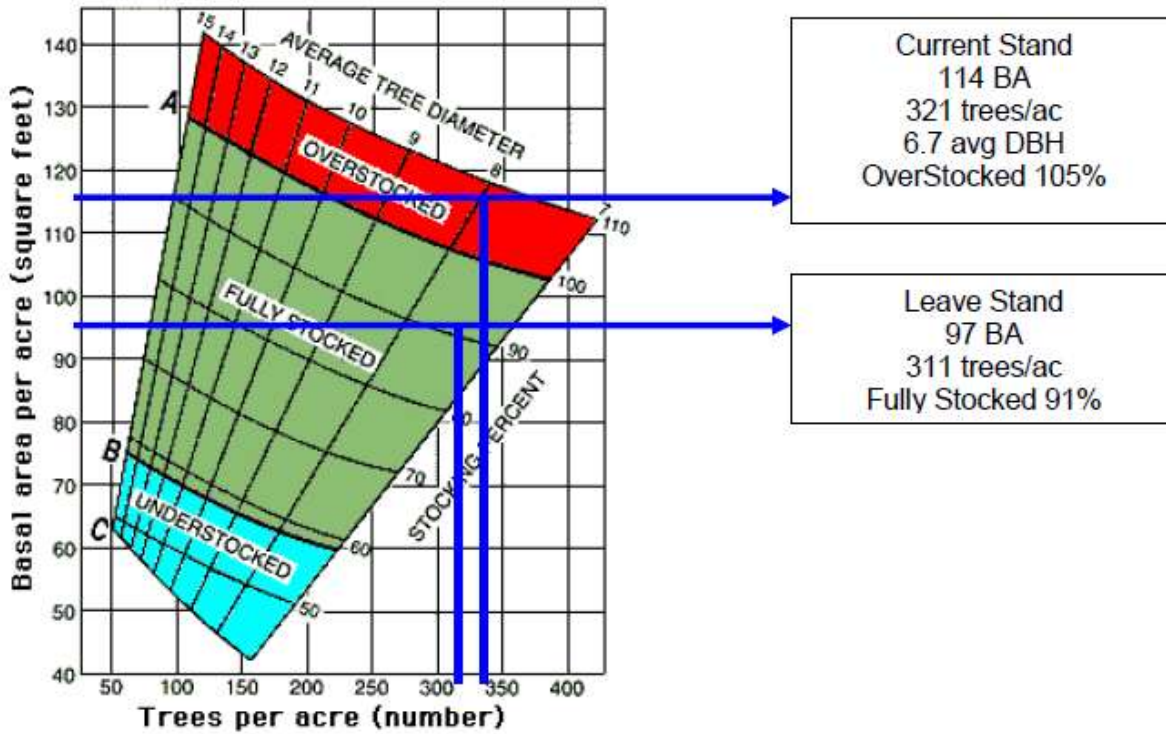
Total Trees/Ac. = 321 Trees/Ac.
BA/A = 114 Sq. Ft./Ac.
Present Volume = 6,060 Bd. Ft./Ac.

Overall % Stocking = 105% (Overstocked)
Sapling Trees/Acre = 184
Pole Trees/Acre = 91
Sawtimber, Quality, and Prime Trees/Ac. = 41
Cull Trees/Acre = 5

Table 2. Gingrich Stand and Stock Table for Y1505 in April 2008

Stocking Guide

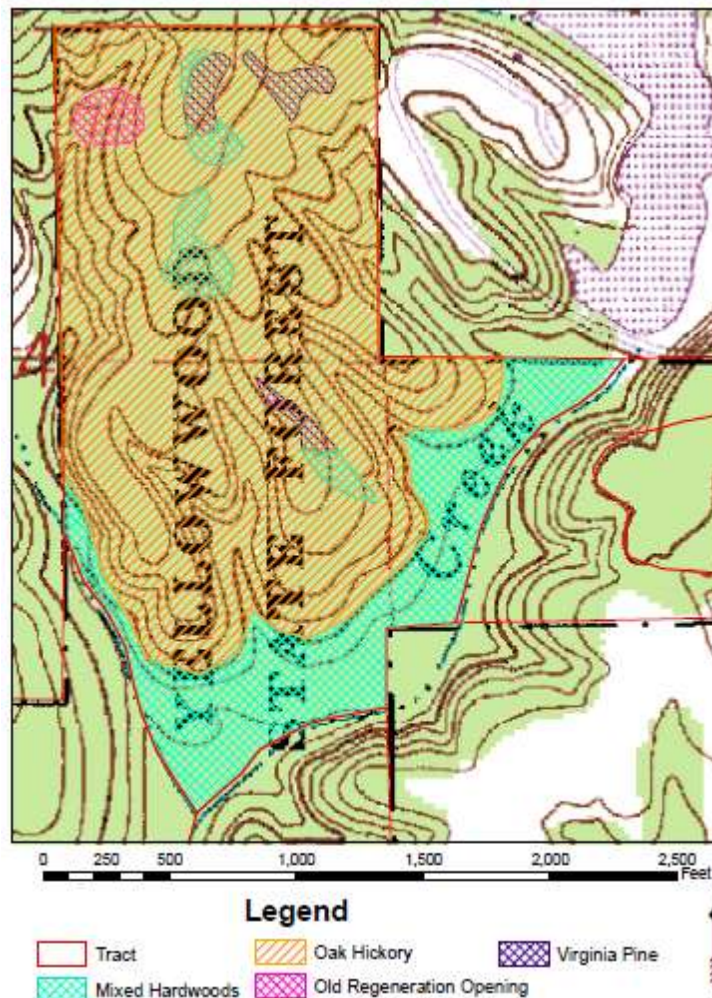
Inventoried: 4/08 by Amy Zillmer



Summary Tract Silvicultural Prescription and Proposed Activities

The current forest resource inventory was completed on April 8, 2008 by Forester Amy Zillmer. Forty prism points were sampled over 92 acres (1 point for every 2.3 acres). A tract summary of the forest resource inventory is given above and a present volume by species breakdown of the summary is given in Table 3 below. Currently Y1505 contains an estimated volume of 557,520 BF (6,060 BF/ac). Proposed management would reduce the overall basal area to 97 sq. ft/acre from the estimated 114 sq. ft/acre that is present. Sawtimber and quality stems are estimated at 41 trees/acre. Due to the overstocked component of this forest resource a timber sale is prescribed for Y1505. The prescription for the tract would include a singletree selection cutting to thin and release desirable residual trees and to remove suppressed and poorly formed trees. Group selection cuttings may be prescribed to regenerate portions of the tract that have poor stocking, excessive mortality and storm damage, non-native pine, or contain aggregations of timber with declining vigor from past drought events. The tract's forest resource is composed of three Stratums as outlined in Figure 2 below based on the major timber types illustrated.

Figure 2. Y1505 Tract Stratums Map



Tract Subdivision Description and Silvicultural Prescription

Oak Hickory Stratum

This cover type covers approximately 51 acres and is the most dominant cover type present in Y1505. It is found mainly along the tract's ridgetops and sideslopes. This Stratum is dominated by an overstory of White Oak, Black Oak, Scarlet Oak and Northern Red Oak. These species also make up the majority of inventoried harvestable volume. To a lesser extent Black Cherry, Hickory spp., Black Walnut, Largetooth Aspen, Red Maple, White Ash, and Yellow Poplar were also noted. Sections of this Stratum are experiencing decline from its overstocking and will benefit from thinning from both above and below to improve overall Stratum vigor. In areas where extensive fire damage may be located group selection cuttings may also be prescribed.

Virginia Pine Plantation Stratum

Virginia Pine was planted along the tract's ridgetops. Most likely this area had been cleared and farmed in the last century and later was planted to pine by the Federal Government to stabilize the soil and reduce erosion. This Stratum is currently experiencing excessive mortality as the Virginia Pines are maturing and transitioning back into a native hardwood stand. Many of the planted areas have already died and are currently comprised of a brushy, early successional Mixed Hardwood cover type. The remaining portion of these plantings that make up this Stratum consists of about 10 acres. Removing the remaining Virginia Pine would accelerate this conversion back to native hardwoods. A postharvest TSI project to control wild grapevines and the culling of undesirable species/poorly formed timber stocking is also planned.

Mixed Hardwoods Stratum

This Stratum is comprised of a variety of upland and bottomland species. There is a small regeneration opening from the last timber sale in 1979 that is located and classified within this Stratum due to its small size. The regeneration here is predominantly Mixed Hardwoods. YEP is fairly abundant in portions of this Stratum however a significant number of these trees have developed modest decline and dieback in the crown or are already dead. Some of the YEP may have very little merchantable value due to decline from the drought and scale damage that occurred in 2012. Canopy gaps are already evident throughout this Stratum from the Yellow Poplar dieback. The White Ash component of this Stratum contains volume that is at risk due to local sightings of Emerald Ash Borer in northern Brown County. This hardwood species should be managed to reduce the further spread of Emerald Ash Borer. Pine plantations areas are common here on the tract's ridgetops and bottomlands. This Pine resource has in some areas converted over to Mixed Hardwoods cover type due to excessive mortality. Singletree selection in the form of an improvement cutting is prescribed over the majority of this Stratum however some pockets where mortality is aggregated may necessitate the prescription of group selection regeneration openings. Some of these small pockets are located in the uplands in deteriorated Pine stands. Past evidence of windthrow is also common within this Stratum. This portion of the tract could also greatly benefit from a postharvest TSI project to reduce exotics (Multiflora Rose) and to control wild grapevines.

Summary Tract Silvicultural Prescription and Proposed Activities

Y1505 had a small sale in 1979 of 48,591 BF in 132 trees which was sold to Foley Hardwoods. Harvest areas were concentrated along the tract's three main ravines. Logging roads were established into the tract from the access off the east private landowner. The post harvest audit noted little to no residual stand damage.

The prescribed harvest for 2015 would be combined with the adjacent Compartment 15 Tract 1 to utilize a stream crossing over the intermittent portion of Dunnaway Creek. The implementation of Best Management Practices would reduce the impacts of soil erosion and protect water quality. Retention of most of the Oak and Hickory trees will help to enhance habitats for many wildlife species including the Indiana Bat. A planned harvest should encourage the control of wild grapevines prior to a sale. It is recommended that the timber harvest include the removal of the remaining Virginia Pine component and perform a thinning in the upland Oaks. A Postharvest timber stand improvement project is planned to improve and promote the Mixed Hardwood natural regeneration for the next management cycle.

A riparian area exists along the banks of the mapped intermittent streams that comprise the southeastern and southwestern tract boundaries of Y1505. The management within these areas will be prescribed according to current Division of Forestry guidelines.

A postharvest Timber Stand Improvement (TSI) project is planned following the harvest. An evaluation of the suitability for the entire tract or portions of the tract for this project to be submitted for contracting will be made following the harvest. A field review for regeneration opening success is also planned 3-4 years after opening TSI completion.

Given the recent inventory and growth of Y1505's forest resources, this tract is suitable for a 15 year management cycle wherein growth and development of the tract's forest resource is evaluated by a forest inventory every 15 years. Based on the current inventory a harvest of 150-250 MBF is anticipated. A timber sale is proposed for FY2015-16 and will be combined with a sale in the adjacent Tract 01.

Table 3. Estimated Present Volumes from April 2008 inventory in Y1505

Species	Total
White Oak	120,520
Black Oak	103,040
Yellow Poplar	61,640
Virginia Pine	47,840
Red Maple	46,000
Scarlet Oak	36,800
American Sycamore	20,240
Sugar Maple	20,240
Largetooth Aspen	17,480
Northern Red Oak	14,720
White Ash	13,800
Black Cherry	10,120
Black Walnut	10,120
Pignut Hickory	8,280
Bitternut Hickory	6,440
Blackgum	6,440
American Beech	4,600
Shagbark Hickory	4,600
Pin Oak	2,760
Red Elm	1,840
Tract Totals (Bd. Ft.)	557,520
Per Acre Totals (Bd. Ft./Ac.)	6,060

Proposed Activities Listing

Proposed Management Activity

Wild Grapevine Control
 DHPA Roadwork Project
 Timber Marking
 Combined Tract Timber Sale (W/Tract 1)
 Postharvest TSI & Invasive Project
 Inventory and Management Guide

Proposed Period

CY2015
 CY2015
 CY2015
 FY2015-16
 CY2016-18
 CY2029

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