Indiana Department of Natural Resources
Division of Forestry
DRAFT

RESOURCE MANAGEMENT GUIDE

State Forest: **Ferdinand** Compartment: **02** Tract: **10**
Tract Acreage: **80** Commercial Forest Acreage: **80**
Forester: **J. Henry & A. Smith** Date: **10/2/2015**

Location

Tract 0210 is located in Perry County, Sections 19 and 20, T3S, R3W in Clark Township. It is located roughly 0.7 miles south of the Ferdinand State Forest Office. It can be accessed by firelane 34 off of Chickadee Road.

General Description

Tract 0210 consists of approximately 80 acres with roughly 7.7 acres of planted pine, 36.2 acres of mixed hardwoods, and 36.1 acres of oak-hickory forest. Tract 0210 experienced heavy storm and wind damage on May 30, 2004 with the heaviest damage focused in the southeast corner of the tract. The effects of this storm are still very evident today. The overall timber quality of this tract is fair to average and ranges from mainly small to medium sawtimber in size with some large sawtimber sized trees in the oak-hickory areas. A summary of the forest resources in tract 0210 in relation to species dominance is noted below in Table 1.

Table 1. Overview of Forest Resources in Tract 0210

Overstory Sawtimber Layer	Understory Poletimber Layer	Regeneration Layer
White Oak	American Beech	American Beech
Yellow Poplar	Sugar Maple	Black Cherry
Northern Red Oak	Red Pine	Sugar Maple
Black Oak	Yellow Poplar	Dogwood
Sugar Maple	Bitternut Hickory	American Elm
Bitternut Hickory	Blackgum	Blackgum
Virginia Pine	Red Elm	Ironwood
Shingle Oak	Virginia Pine	Red Elm
Pignut Hickory	White Oak	Sassafras
Eastern White Pine	Sassafras	
Pin Oak		
Black Cherry		
Blackgum		
Red Pine		
River Birch		
Mockernut Hickory		
American Beech		
Shagbark Hickory		
Sassafras		

History

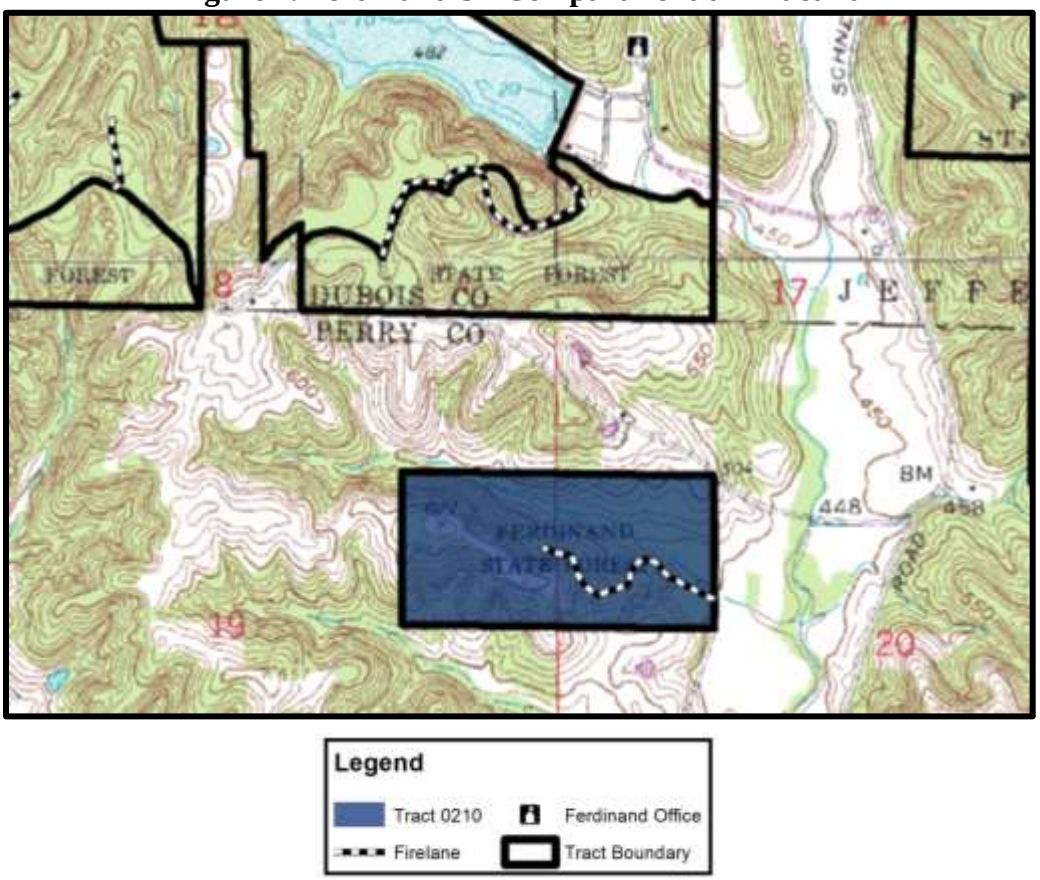
The area that includes Tract 0210 was purchased from William J. and Minnie Schlachter on June 26, 1939. In February of 1953, approximately 4,700 Virginia pine were planted on seven acres of tract 0210 by a forestry crew to be used for timber production. In January of 1968 TSI was completed, although the reasons and location for this are rather vague, there is evidence in the northwest quarter, along the northeast slopes. On October 29, 1979 Forester Janet Eger completed the first Resource Management Guide for the tract in which was prescribed a light harvest of hardwoods in 1995. Over the course of 1984 and 1985, a prison crew conducted some row thinning in the red pine plantations in order to promote growth of the pine and germination of native hardwoods. The second tract inventory was completed on April 26, 1996 by John Zvirblis, who prescribed the removal of approximately 2,400 BF per acre, primarily in the west half of the tact.

In August of 1996, an access road (now firelane 34) was constructed along with a log yard and a short skid trail (log yard is now a part of firelane 34, but the skid trail has been abandoned). In January and February of 1997, pre-harvest grapevine TSI was completed on approximate 34 acres of hardwoods, mainly in the western half of the tract. In 1997, there was a timber sale of an estimated 78,642 bdft in 296 trees and 39 culls from 28 acres on tract 0210. The winning bidder was Waninger & Sons Timber Company. The post-harvest TSI was completed in October of 2000. The southeast corner of the tract experienced heavy storm damage on May 30, 2004. A salvage harvest was marked, however, there were no bidders at the time and the sale was never sold. The current inventory of the tract was completed by Jacob Henry on July 8, 2015.

Landscape Context

Tract 0210 is adjoined on all sides by private agriculture lands or mixed hardwood forests. A larger chunk of Ferdinand State Forest lies less than 0.3 miles north of the tract. Water sources on the tract include the mapped intermittent stream. Ferdinand Lake is located roughly a half mile north of tract 0210. The tract is not in the Ferdinand Lake watershed.

Figure 1. Ferdinand SF Compartment 02 Tract 10



Topography, Geology and Hydrology

North, south, and northeast-facing slopes varying from long and gentle to abrupt and steep characterize tract 0210. A mapped intermittent stream cuts diagonally northwest to southeast through the tract.

Soils

Adyeville-Wellston-Deuchars silt loams (AbvD2)complex contains Adeyville, Wellston, and Deuchars soils. They occur on 8 to 20 percent slopes and are eroded. The depth to the watertable is greater than 80 inches for the Adyeville and Wellston soils but only 24 to 36 inches for the Deuchars soils. Available water capacity is low (about 4.1 inches) for Adyeville, moderate (about 8.8 inches) for Wellston, and moderate (about 9.0 inches) for the Deuchars soils. The site index for northern red oak forWellston soils is 81 and 90 for Deuchars soils.

Adyeville-Tipsaw-Ebal complex (AccG)complex contains Adeyville, Tipsaw, and Ebal soils. They occur on 20 to 50 percent slopes and are very rocky. The depth to the watertable is greater than 80 inches for the Adyeville and Tipsaw soils but only 24 to 36 inches for the Ebal soils. Available water capacity is low (about 4.1 inches) for Adyeville, low (about 3.3 inches) for Tipsaw, and moderate (about 7.2 inches) for the Ebal soils. This soil type is moderately well to somewhat excessively well drained and has a high to very high runoff class.The site index forblack oak forTipsaw soils is 70and 80 for Ebal soils.

Apalona-Zanesville silt loams (AgrC2)contains Apalona and Zanesville soils. They occur on 6 to 12 percent slopes and are eroded. The depth to the watertable is 15 to 26 inches for the Apalona soils and 19 to 28 inches for the Zanesville soils. Available water capacity is low (about 4.0 inches) for the Apalona soils and low (about 4.9 inches) for the Zanesville soils. This soil type is moderately well drained and has a high runoff class. The site index for Apalona soils is 60 for white oak.

Ebal-Deuchars-Kitterman complex (EabD2)contains Ebal, Deuchars, and Kitterman soils. They occur on 12 to 24 percent slopes and are eroded. The depth to the watertable is about 24 to 36 inches for Ebal and Deuchars soils and 12 to 24 inches for Kitterman soils. Available water capacity is moderate (about 7.5 inches) for Ebal, moderate (about 9.0 inches) for Deuchars, and low (about 4.1 inches) for the Kitterman soils. This soil type is moderately well drained and has a high to very high runoff class. The site index forEbal soils is 80 for black oak, 90 for northern red oak for Deuchars soils, and 57 for white oak for the Kitterman soils.

Gatchel loam (GacAW) is an occasionally flooded soil for a very brief duration occurring on 0 to 2% slopes. It is a somewhat excessively drained soil with a depth of more than 80 inches to the water table. Available water capacity is moderate at about 6.1 inches. The site index is not given for Gatchel loam soils but common trees to manage for are baldcypress, bitternut hickory, Blackgum, green ash, pin oak, red maple, shingle oak, and swamp white oak.

Wakeland silt loam (WaaAH) is a frequently flooded soil for a brief duration occurring on 0 to 2% slopes. It is a somewhat poorly drained soil with a depth of 6 to 24 inches to the water table. Available water capacity is very high at about 12.9 inches. The site index is 90 for pin oak.

Access
Tract 0210 is accessible off of Chickadee Road (formerly Schlachter Road) and by Firelane 34.

Boundary
Tract 0210 is bounded on the northeast by non-wooded private property and the northwest by a partial fence line. The southern edge backs up to a farm field, lined by a maintained wire fence row. The eastern edge is bordered by Chickadee road. The western border has very little of the old fencing left indicating the lines location. It will need to be run by compass and flagged in order to establish a more accurate property line. The boundary lines of this tract were painted orange in the past, however, little evidence of that painted tree line exists today.

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

Typical wildlife species were observed in the tract during the inventory (various songbirds, chipmunks, squirrels, box turtles, toads, deer). Tract 0210 has an abundant supply of food resources such as soft and hard mast. The mapped intermittent stream provides a water source for wildlife.

The Division of Forestry has instituted special procedures for conducting forest resource inventories so that the documentation and analysis of live tree and snag tree densities are examined on a compartment level basis in order to maintain long-term and quality forest habitats. Management practices conducted on 0210 will be conducted in a manner that will maintain diverse, quality forest habitats for wildlife populations long-term.

Live Legacy Trees* and Snags inventoried 2015 on F0210

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Legacy Trees *					
11"+ DBH	720		1,192	472	
20"+ DBH	240		205		
Snags (all species)					
5"+ DBH	320	560	933	613	373
9"+ DBH	240	480	506	266	26
19"+ DBH	40	80	32		

*** Species Include:** AME, BIH, BLL, COT, GRA, REO, POO, REE, SHH, ZSH, SIM, SUM, WHA, WHO

Communities

Tract 0210 is composed of mesic to dry-mesic upland hardwoods dominated by oak-hickory, mixed hardwoods, and pine plantings. The dominant overstory timber species include white oak, yellow poplar, northern red oak, black oak, and sugar maple. The understory contains mainly American beech, sugar maple, red pine, yellow poplar, bitternut hickory, and blackgum. The ground cover of tract 0210 consists of mainly mesic to dry mesic species.

During the current resource inventory all portions of the tract were reviewed and evaluated for old growth potential as well as for Representative Sample Areas. No representative stratums or old growth areas appear to exist within this tract.

Exotic Species

Exotic species observed during the inventory of tract 0210 were Japanese stilt grass, autumn olive, and multiflora rose. The Japanese stilt grass was primarily found along the firelane, as well as scattered throughout the woods where canopy gaps existed. The multiflora rose was located throughout the tract, particularly in the heavily disturbed southeast corner of the tract where the heavy storm damage had occurred in 2004. The autumn olive is also found in the storm damaged southeast corner.

Recreation

Recreation activities in the area could include hiking, birding, wildlife viewing, and hunting. The firelane provides easy access from the road into the tract. Additionally several deer stands and hunting cameras were observed during the inventory.

Cultural
Cultural resources may be present but their location(s) are protected. Adverse impacts to significant cultural resources noted will be avoided during property management activities.

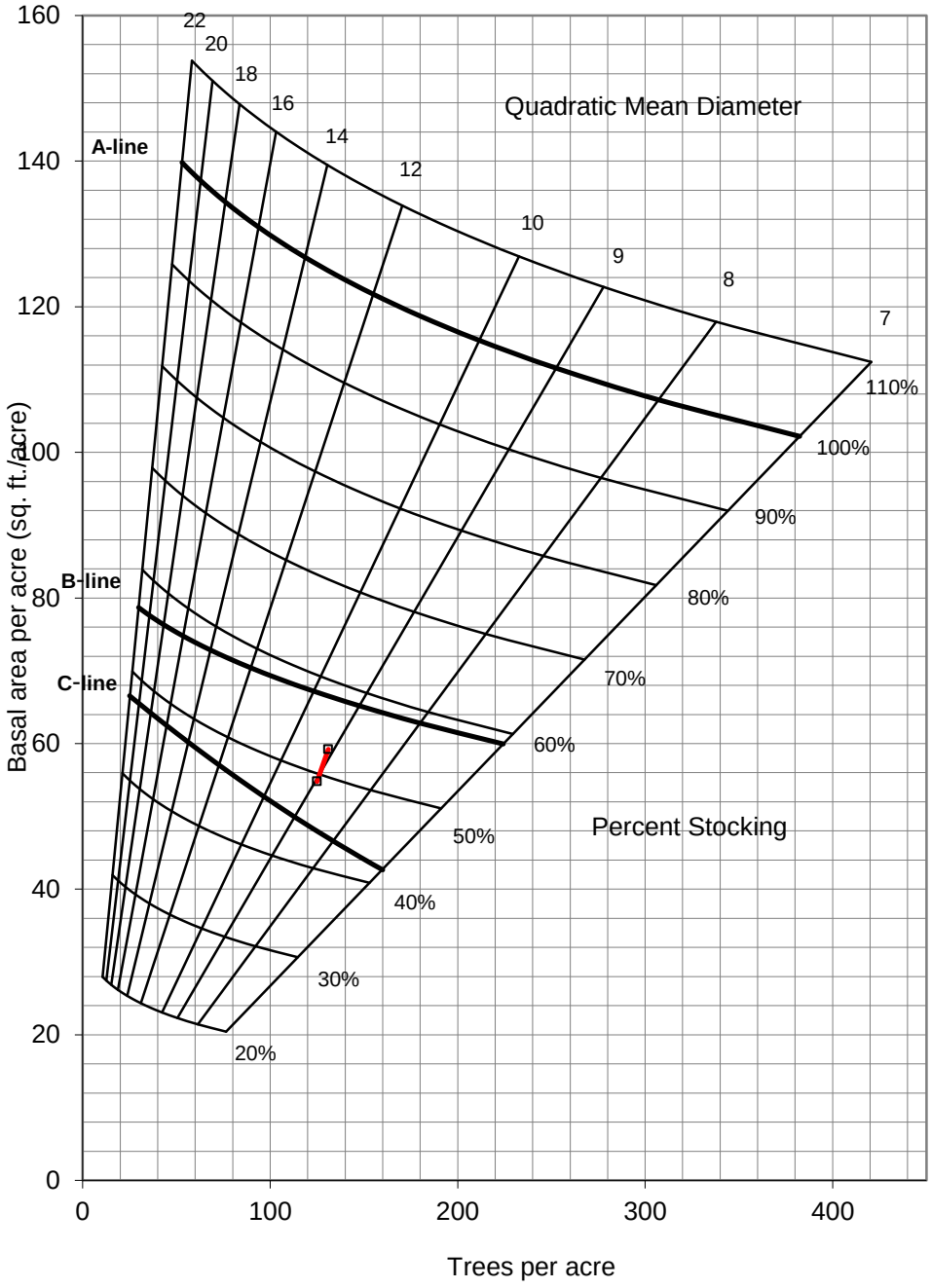
Tract Subdivision Description and Silvicultural Prescription

The overall stand structure for this tract is represented in the following Gingrich Stand and stock table that follows the individual stand summary.

Tract Summary Data

Total Trees/Ac. = **141 Trees/Ac.** Overall % Stocking Hardwoods = **53%** (Understocked)
BA/A = **59.2 Sq. Ft./Ac.** Sawtimber & Quality Trees/Ac. = **26 Trees/Ac.**
Present Volume = **4,053Bd. Ft./Acre**

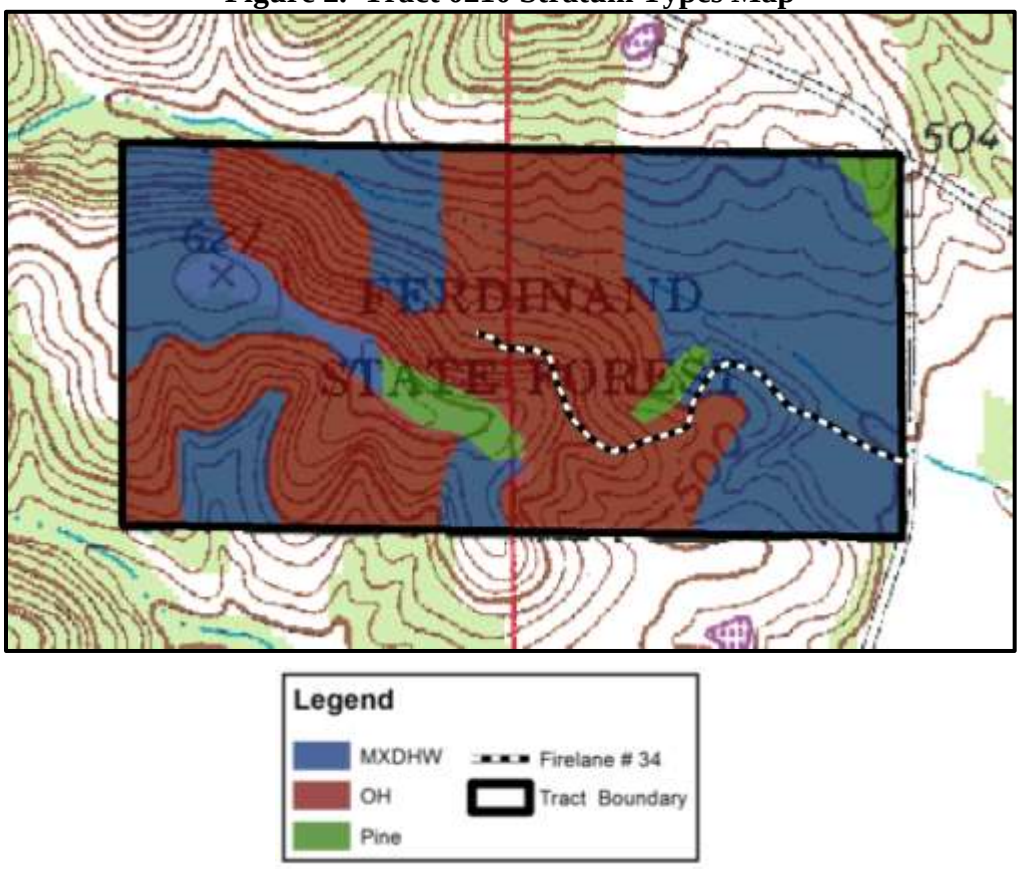
Table 2.Gingrich Stand and Stock Table for tract 0210



Summary Tract Silvicultural Prescription and Proposed Activities

The current forest resource inventory was completed in 2015 by Jacob Henry. Thirty-two prism points were sampled over 80 acres (1 point for every 2.5 acres). A tract summary of the forest resource inventory is given above and a species breakdown of the summary is given in Table 3 below. The tract's forest resource is composed of 3 different stratums based on the 3 major timber types and size classes mentioned below.

Figure 2. Tract 0210 Stratum Types Map



Mixed Hardwoods Stratum

The mixed hardwoods type covers roughly 45% of the tract or about 36.2 acres with an average basal area of 56.52 square feet per acre. The overstory is dominated by yellow poplar, sugar maple, white oak, and American elm. The understory layer consists of mainly sugar maple, American beech, red pine, and yellow poplar. The regeneration layer consists of mainly American beech, sugar maple, and black cherry.

Most of the mixed hardwoods are small to medium sized sawlog with a few areas of small saplings with no dominating overstory. Several areas had many down or broken trees due to past wind and storm damage. No timber harvest activities are recommended at this time in the mixed hardwoods stratum type.

Oak-Hickory Stratum

The Oak-Hickory timber type provides significant wildlife, timber resource, and value. The retention of species in this stratum is important in the Division's long-term timber management objectives. The Oak-Hickory type covers roughly 45.1% of the tract or about 36.1 acres. The overstory is dominated by white oak, black oak, northern red oak, yellow poplar, and bitternut hickory with an average basal area of 66.2 square feet per acre. The understory layer consists of mainly sugar maple, bitternut hickory, Blackgum, American beech, northern red oak, and pignut hickory. The regeneration layer consists of mainly sugar maple, American beech, American elm, bitternut hickory, ironwood, and red elm.

The oak-hickory areas range from small to medium in size with some large sawlog in sized trees. Several areas had many down or broken trees due to past wind and storm damage. No timber harvest activities are recommended at this time in the oak-hickory stratum type.

Pine Stratum

Pines were commonly planted for erosion control purposes during the first half of the 20th century. As these pines have matured and individual trees have declined, native hardwoods have become established especially in the stratum's understory and canopy gaps. This timber type covers roughly 9% of the tract or about 7.7 acres of the tract with an average basal area of 55.0 square feet per acre. The overstory is dominated by Virginia pine, eastern white pine, and red pine. The understory layer consists mainly of yellow poplar, red pines, dogwood, and sugar maple. The regeneration layer consists of mainly yellow poplar, American beech, sugar maple, and dogwood.

The pine areas are in fair to poor condition with some of the overstory experiencing crown dieback and several areas of downed trees due to wind and storm damage. The pines are pole to medium sawtimber sized. No timber harvest activities are recommended at this time in the pine stratum type.

Summary Tract Silvicultural Prescription and Proposed Activities

Given the recent inventory and growth of tract 0210's forest resources, no timber harvest activities area recommended at this time. The Japanese stilt grass along the firelane should be considered for treatment before it has the opportunity to spread farther into the forest interior. Status of Autumn Olive should also be monitored for possible treatment.

Table 3. Overview of Sawtimber Volume Estimates for the 80 Commercial Forest Acres in 0210

Species	Harvest	Leave	Total
White Oak	7,330	91,940	99,270
Yellow Poplar	6,410	60,010	66,420
Northern Red Oak	0	27,200	27,200
Black Oak	1,960	23,360	25,320
Sugar Maple	2,310	19,160	21,470
Bitternut Hickory	0	19,000	19,000
Virginia Pine	0	12,820	12,820
Shingle Oak	0	10,660	10,660
Pignut Hickory	0	9,490	9,490
Eastern White Pine	0	8,980	8,980
Pin Oak	0	6,750	6,750
Black Cherry	0	5,470	5,470
Blackgum	730	2,410	3,140
Red Pine	1,740	1,180	2,920
River Birch	0	1,830	1,830
Mockernut Hickory	0	1,020	1,020
American Beech	0	870	870
Shagbark Hickory	0	870	870
Sassafras	0	730	730
Tract Totals (Bd. Ft.)	**20,480**	**303,750**	**324,230**
Per Acre Totals (Bd. Ft./Ac.)	**256**	**3,797**	**4,053**

Proposed Activities Listing

Proposed Management Activity	***Proposed Period***
Invasives Treatment	CY2016-2018
Reinventory and Update Management Guide	CY2030

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