

PRODUCT DESCRIPTION

TITLE:

Forest Restoration Analysis

REQUIRED BY:

Fire Management Officer

PRODUCT # 03

NAME:

Marla Rodgers

SUMMARY:

The Valles Caldera National Preserve (VCNP) main purpose is to maintain for future generations. With this product it will allow for the fire management officer to maintain future forest conditions. It will also allow for the evaluation of past practices and conditions.

The outcome product will consist of two maps containing different types of forests and its vegetation. It will be divided into individual zones as it overlays the hunting zones on the different vegetation. This will allow for the creation of schedules to see the conditions each zone is in.

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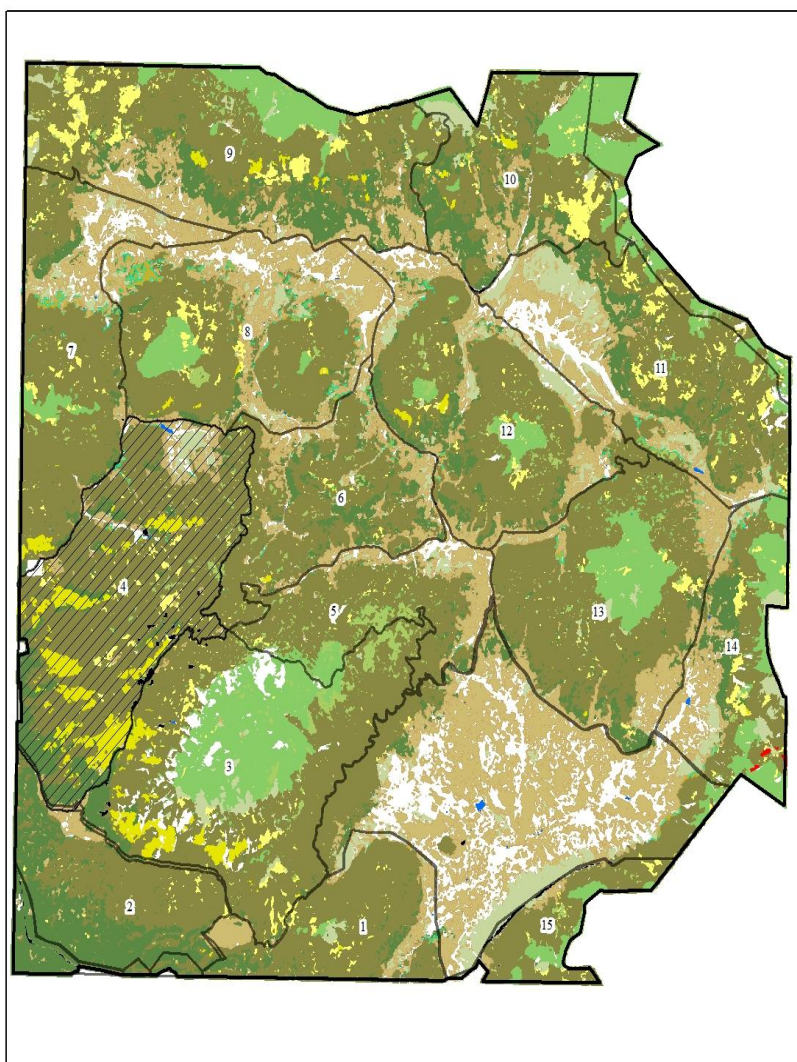
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NAME:

Marla Rodgers

MAP# 003

SCALE: 1:112,500



Forest Restoration

Legend

- Area for Restoration
- Forest Zones
- VCNP Boundary
- Spruce-Fir Forest and Woodland
- Forest Meadow
- Mixed Conifer Forest and Woodland
- Blue Spruce Fringe Forest
- Aspen Forest and Woodland
- Ponderosa Pine Forest
- Gambel Oak-Mixed Montane Shrubland
- Upper Montane Grassland
- Lower Montane Grassland
- Montane Riparian Shrubland
- Roads-Disturbed Ground
- Open Water
- Post-Fire Bare Ground

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STEPS REQUIRED TO MAKE PRODUCT

DATA NEEDED	STEPS TO MAKE PRODUCT: (Using System Functions)
VCNP Boundary 1:100,000	Select by attribute for forest coverage and forest classification
Forest Classification	Select by attribute for gridcode, acreage Measure for acreage and density
U.S. Topographical Map 1:100,000	Select by attribute for length, elevation, forest zones
Forest Density	Pick a quadrant of trees. Measure distance between four trees than divide by four to find average distance of trees. Then repeat process for rest of points that have chosen. Add all average points together to find total average. Multiply average distance by itself to find average area tree takes. Then divide by 10,000 meters squared to find tree density per hectare

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LOGICAL LINKAGES:

List to Graphic Entity

Forest Classification to Forest Zones

Forest Zones to VCNP Boundary

Map to Map

Ability to overlay forest classification map to forest zones and VCNP boundary

Ability to overlay forest classification to areas of old growth and new growth

Attribute to Attribute

Forest classes to forest zones

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ERROR TOLERANCE:

Type of error:	Possible occurrences	Result of Error	Impact on benefits	Error tolerance
Referential Error	1. Forest class mislabeled 2. Forest zone mislabeled	1. Thinning and maintenance mistakes 2. Wrong logging zone	1. Impacts new growth and old growth forests 2. Impacts incoming revenue to VCNP	1. < 10% 2. 2%
Topological	Forest zones mislabeled	Logging wrong areas and can have incorrect prescribed burn scheduling	Can impact new growth forests both in prescribed burns and logging	< 5%
Relative	Incorrect boundary lines	Minor boundary issues	Minor	+/- 100 m

Absolute	Inaccurate forest zones and VCNP Boundary	Forest zones not aligned with VCNP boundary	Logging can happen outside of VCNP and can burn and restore land not belonging to VCNP	+/- 50 m
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FREQUENCY:

YEAR	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
MAPS		10	10	10	10	10	10	10	10	10
LISTS										
DOCUMENTS		10	10	10	10	10	10	10	10	10

FUNCTIONS INVOKED:

Function	Number
Search by attribute	6
Measure	4
Forest Density	3
Classify	1
Label	1
Create List	1

WAIT TOLERANCE:

Wait Tolerance Category	Time
Low	5 years
Moderate	1 year
High	6 months

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COSTS:

(to produce product using existing methods)

	HOURS	\$ COST
LABOR		
Professional	300	50,000.00
Technical	150	10,500.00
MATERIALS:		7,000.00
TOTAL COST:		67,500.00

PROGRAM/PROCESS RELATED:

Program/Process	Budget
Transportation	\$10,000.00
Forest Thinning and Removal	\$50,000.00
Wood Manufacturing and Selling	\$15,800.00

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BENEFITS AND SAVINGS:

- A. Generating cartographic maps reduces external costs and reduces errors that occur from unfamiliarity with the area. As well as reducing material costs that are also brought in by outside agencies. These costs can include surveying equipment, GPS, and aerial photos.
- B. It will reduce the amount of overgrowth of forests. Limiting the amount of dry timber that causes forest fires due to weather events, such as lightning strikes. It will also reduce the amount of uncharacteristic wildfires by allowing a fire regime. And it will bring revenue from utilization of woody products that are turned into a biomass renewable energy source.
- C. It will cause a reduction in non-native plant species, allowing for native plants to thrive and become more diversified, bringing in old growth characteristics. This will also allow for increased and improved wildlife and fish habitats, as well as, improve upon the water quality for the region. It will also lessen climate change impacts.