

# M2S2 Presentation



## **Robotics MMRP TO#004 Vegetation Removal Fort Bragg Aerial Gunnery Range (AGR)**



# Agenda



- **Project Summary**
- **Staff Overview**
- **Robotic Platforms**
- **Command Units**
- **Fort Bragg AGR Specifics**
- **Challenges**
- **POCs**



# Project Summary



<b><u>Contract No.</u></b>	<b>W912DY-13-D-0065 - TO 0004</b>
<b><u>Title:</u></b>	<b>Ft. Bragg AGR, Tree Thinning and Cutting</b>
<b><u>Issued by:</u></b>	<b>USAESCH</b>
<b><u>Location:</u></b>	<b>Ft. Bragg, NC</b>
<b><u>Awarded:</u></b>	<b>April 2015</b>
<b><u>Completed:</u></b>	<b>January 2016</b>



# Project Summary



## Scope of Work:

- Perform tree cutting and tree thinning activities in 1168 acre MEC and MPPEH contaminated area in support of range construction.
- Prepare and gain approval of a Tree Thinning Plan for a 130 acre area designated for tree thinning only.
- Stabilize disturbed soil by seeding.
- Conduct field repair and repair testing of GFE.
- Surveying.
- MEC Escort.





# Fort Bragg, NC AGR (PN 55121) Tree Cutting/Tree Thinning Exhibit A

## Legend

	Base Acres	Option 1 Acres	Option 2 Acres	Option 3 Acres	Option 4 Acres
Contractor Tree Cutting Area, (See Note 1)	829.5	0	3.5	4.6	0
Fort Bragg Conducted Tree Thinning, (Contractor to Re-occupy), (See Note 2)	120.2	20.8	13.9	0	1.2
Conditional Fort Bragg Conducted Tree Thinning, (Contractor to Re-occupy), (See Note 3)	43.3	0	0	0	0
Contractor Conducted Tree Thinning for RCW Habitat, (See Note 4)	130.8	0	0	0	0
Fort Bragg Conducted Tree Thinning for RCW Habitat, (Contractor to Not Re-occupy), (See Note 5)	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Options under this task order are anticipated to mirror construction options actually awarded. The Base area is defined as the delineated project area excluding any options.

- Option 1 Base and options refer to AGR construction base and options.
- Option 2 Options under this task order are anticipated to mirror construction options actually awarded. The Base area is defined as the delineated project area excluding any options.
- Option 3
- Option 4
- Existing Cemetery (See Note 6)
- Jurisdiction Determination Wetlands (JDW), 170.0 Acres (See Note 7)
- Construction Footprint (See Note 8)
- RCW Cavity Trees, 200 Ft Buffer (See Note 9)
- Low Risk (See Note 10)
- Medium Risk
- High Risk
- Cutting/Thinning Phase (See Note 11)

- Notes:
1. Tree cutting shall be conducted by the Contractor in area depicted (i.e., uplands and Jurisdiction Determination Wetlands (JDW)). See PWS for seeding requirements after cutting.
  2. Fort Bragg Forestry Department intends to remove trees from the depicted area that they consider marketable (greater than 5 inches in diameter and not metal contaminated). This selective tree cutting is more accurately regarded as thinning, but is not to be confused with areas that are to be thinned for the purpose of providing RCW habitat. The Contractor will be required to re-occupy the area and cut and dispose of all remaining trees and vegetation (in uplands and JDW) to a height of 8 inches as required by the PWS for cut areas.
  3. Fort Bragg Forestry Department intends to remove trees from the depicted area that they consider marketable (greater than 5 inches in diameter); however, potential metal contamination in the trees may prevent this. Fort Bragg will not remove trees that they believe to be metal contaminated and not marketable. This selective tree cutting is more accurately regarded as thinning, but is not to be confused with areas that are to be thinned for the purpose of providing RCW habitat. The Contractor will be required to cut and dispose of all remaining trees and vegetation (in uplands and JDW) to a height of 8 inches as required by the PWS for cut areas.
  4. Seeding is not required in areas that are thinned for producing RCW habitat.
  5. Thinning in the depicted area to be performed by Fort Bragg Forestry Department for the purpose of producing RCW habitat. No Contractor effort is required in the depicted area.
  6. The Contractor shall coordinate with Fort Bragg DPW Cultural Resources (910-396-6680) before working in the vicinity of the existing cemetery. The existing cemetery is not to be disturbed.
  7. See PWS for work restrictions in the JDW. Depicted JDW acreage only includes portions of the wetlands that the Contractor will be working in.
  8. See PWS for vegetation disposal restrictions in the construction footprint.
  9. No tree cutting or thinning may occur within the 200 foot Red-Cockaded Woodpecker (RCW) buffer during the RCW nesting season. See PWS for additional details and restrictions.
  10. Low risk areas associated with previous DMPRO-AVN subsurface clearances not shown for clarity.
  11. See PWS for phasing requirements.



DISCLAIMER: The data represent the results of data collection/processing for a specific U.S. Army Corps of Engineers activity and indicate the general existing conditions. As such, it is only valid for its intended use, content, time, and accuracy specifications. The user is responsible for the results of any application of the data for other than its intended purpose.

Source: Esri, DigitalGlobe, GeoEye, Earthstar, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, Swisstopo, and the GIS User Community

2,000	3,000	4,000
Feet		
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Imagery: Source As referenced on map		Coordinate System: NAD83 State Plane North Carolina, Feet





# Staff Overview



USAESCH	
Contracting Officer	Kenneth Bryant
PgM	Spencer O'Neal
Technical Mgr.	Charles Pregeant

ECC	
PgM	Mike Davis
PM	Ray Velazquez
Robotics Mgr	Ryan O'Donnell
SUXOS	Chris Talbot
UXOSO/ QCS	Rick Rogaliner





# Robotic Platforms

## (6) Bobcat T770 w/MRAK

### Attachments:

- Mulcher
- Bucket
- Root Grappler
- Mower deck
- Buncher
- Tree Shear
- Forklift
- Excavator





# Robotic Platforms





# Robotic Platforms







# Robotic Platforms

(3) Caterpillar  
521B Feller-  
Bunchers w/  
MRAK

Attachments:

- Hot Saw
- Mulcher head





# Robotic Platforms





# Command Units





# Command Units





# Command Units



# Ft Bragg AGR



Acres	Area
829.5	Tree Cutting
8.1	Option 2, Option 3
120.2	Bragg Tree Thinning
36.1	Option 1, Option 2, Option 4
43.3	Conditional Bragg Thinning
130.8	Tree Thinning for RCW
1168	<i>Project Total</i>

**Total Acreage %  
Complete**

**93.5%**  
(6.5% were inaccessible)

Duration

270 days

Avg. Daily Production  
Rate

4.5 acres/day





# Ft Bragg AGR

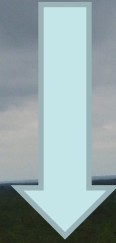




# Ft Bragg AGR



Post Tree Thinning



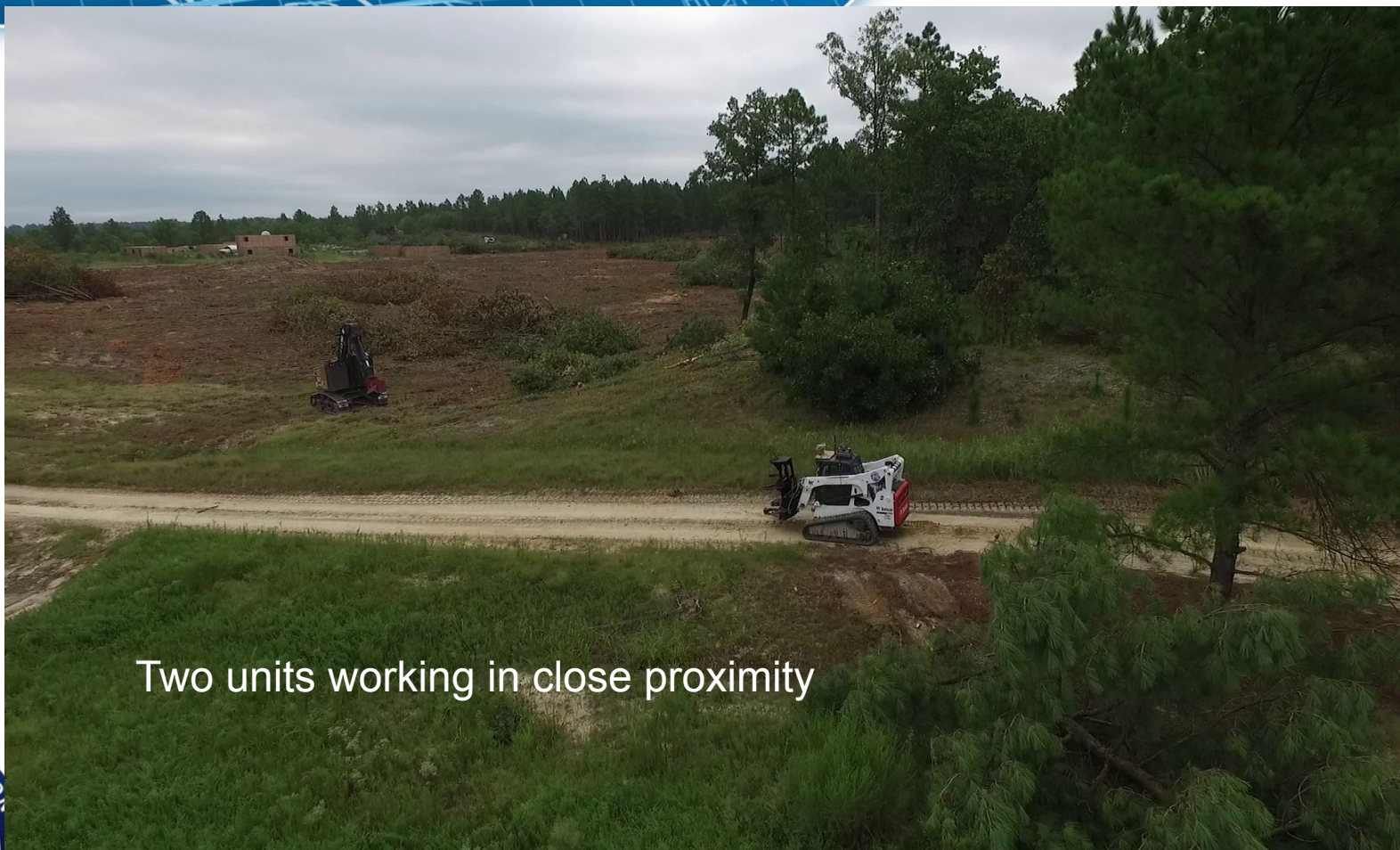
Pre Tree Thinning







# Ft Bragg AGR



Two units working in close proximity





## Ft Bragg AGR - Challenges

Challenges	Solutions
RCW Habitats	Operating during non RCW nesting season. No operations within 200 feet of RCW buffer.
Wetlands	Operations during dry season; manual tree cutting; low ground pressure platforms.
Line of Site Issues	Placement of repeaters to maximize range and LOS.
Cultural sites	Coordination with installation cultural monitors.





# POCs



## ECC

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