THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Natural Resources
DIVISION OF FORESTRY
SOUTHEAST AREA
2417 Tongass Avenue, Suite 213
Ketchikan, Alaska 99901
Main: 907.225.3070
Fax: 907.247.3070

TIMBER SALE PROSPECTUS

Timber Sale: Vallenar Bay
SSE 1345-K

INTRODUCTION:

This Prospectus is intended to furnish sufficient information to enable prospective bidders to decide whether further investigation of the sale is warranted. Descriptions, estimates and other information within this Prospectus are not a part of the contract unless otherwise stated. Should the Prospectus be in error or contradict the sample contract, the sample contract governs. Prospective bidders are urged to examine the timber sale and to make their own estimates. Quantities and quality of timber in the contract are not guaranteed. The sale area and sample contract should be reviewed prior to submission of a bid.

The timber being offered for sale is on State Forest land managed by the Alaska Department of Natural Resources, Division of Forestry (DOF) and federal land managed by the USFS. The timber being sold is a mix of State and federal timber. The DOF is administering the sale of the federal timber under the Good Neighbor Agreement. The authority for the sale is Alaska Statutes, Title 38, Public Lands, Chapter 05, Alaska Land Act, Article 4, entitled "Disposal of Timber and Materials and under the authority of the Agricultural Act of 2014, Pub. L. 113-79, section 8206, 16 USC 2113A, (Good Neighbor Authority) and specified under the provisions of Master Good Neighbor Agreement #17-GN-11100100-004. (The CFDA for the agreement is 10.691)

LOCATION AND AREA:

The project area is on the north end of Gravina Island (See Attachment A). Vallenar Bay is approximately five miles west of the Ketchikan International Airport and is viewable on USGS quadrangle Ketchikan B-6. The road corridor and timber sale encompasses State, federal and Ketchikan Gateway Borough land in Sections 5, 6 and 8 of T75S, R90E; Sections 35 and 36 of T74S, R89 E; Sections 1, 2, 11, 12, 13, 14, 19, 23, 24 and 30 of T75S, R89E all within Copper River Meridian (CRM).

In this area, the Division of Forestry is offering ten clear-cut units composed of approximately 481 acres. The units are shown on the attached Sale Area Map, and are designated on the ground by the State with pink “timber harvest boundary” flagging. Federal units are additionally marked with orange paint and orange tags. Units 10 and 12 contain timber retention areas adjacent to Class III streams within the units; trees have been marked within these areas for retention with orange paint.

Acreage for the units is based on GPS traverses using a GIS grade receiver that was post processed.

The proposed sale is situated on uplands approximately 100 to 1,100 feet above sea level. The terrain is varied and generally less than 65% slopes. There are several units containing rock bluffs and steep hillsides with sections over 65%. The harvest units may be harvested using a combination of ground based systems (shovels) and cable logging systems. Several of the units are adjacent to an existing remote residential area; timber retention and yarding constraints have been designated on the ground and in the Forest Land Use Plan (FLUP) for these areas.

The FLUP can be accessed at:
https://aws.state.ak.us/OnlinePublicNotices/Notices/View.aspx?id=190951

The supporting USFS documents can be accessed at:
https://www.fs.usda.gov/project/?project=51766

VOLUME AND DESCRIPTION OF TIMBER:

The timber being offered is a mix of old growth and approximately 65-year-old young growth timber. The timber sale was cruised in the fall of 2017 and summer of 2018 by the Division of Forestry using the Atterbury Cruise System. The sale information and volumes represented in this document and the reports are estimates only. "Merchantable saw log," is considered a No. 4 or better saw log. The minimum merchantable saw log dimensions for the purpose of this contract is 24 feet long plus trim, at least 6 inches in diameter inside the bark at the small end with at least 50% net scale according to the Official Rules of the Log Scaling & Grading Bureaus developed and authored by The Northwest Log Rules Advisory Group. The total estimated merchantable "timber" volume in this sale consists of approximately:

Ownership	Species/ Type	Volume (MBF) Net +Net Utility
USFS	Young Growth Sitka Spruce	2,225
USFS	Young Growth Hemlock	399
USFS	Red Alder	99
USFS	Small saw log and utility	112
State Forest	Young Growth Sitka Spruce	5,095
State Forest	Young Growth Hemlock	1,408
State Forest	Red Alder	344
State Forest	Old Growth Sitka Spruce	1,698
State Forest	Old Growth western hemlock	2,343
State Forest	Old Growth western red cedar	1,694
State Forest	Old Growth Alaska Yellow Cedar	31
State Forest	Small log and utility	863
All ownership	Total all types	16,310

*MBF= one thousand board feet Scribner log scale.

The timber sale cruise report which contains the State's estimate of timber type, quantity, and quality for this sale, in addition to the sort and grade parameters which were applied during the cruise, is attached to this prospectus as Attachment B. Logs not meeting the sort parameters for a saw log sort have been represented in the pulp sort (small log and utility). Obvious standing culls were not cruised.

The areas listed in the FLUP for the harvest units were reduced by the estimated width of the cleared area associated with the existing road for the purpose of reporting in the cruise. Existing decked timber on the road within the sale area on State Forest land was not estimated in the cruise. The decked timber in these areas is considered part of the sale's potentially merchantable timber but has not been included in the table above.

The purchaser is required to yard all merchantable timber. Only merchantable saw logs of Sitka spruce, western hemlock, western red cedar and yellow cedar are required to be removed from the sale area. Merchantable timber not meeting the merchantable saw log requirements that is hauled off the sale area shall be accounted for in scale and paid for at the utility rate. The red alder saw log volume is an optional removal; if the Purchaser removes the red alder saw log volume from the sale area, it shall be scaled and paid for at the rate bid for the species.

ACCESS:

The sale is accessed by the newly constructed Vallenar Bay Road on Gravina Island. From the old Lewis Reef saw mill log transfer facility (LTF) also known as the Gravina Island Industrial Complex (GIIC) access to the sale area is approximately 4 miles along the Vallenar Bay Road to the start of the sale area. Access to the GIIC for general inspection is via the Ketchikan International Airport's ferry and the connecting road system. The existing Vallenar Bay Road accesses the majority of the sale area. Approximately 2.25 miles of new road is required to be constructed on State Forest land and 1.1 miles of FDR 8110 is needing to be reconstructed on USFS land. Closure of 3.6 miles of state and federal road is required. Maintenance to the Alaska Forest Practices Act and Regulations is required on all the roads used within the GIIC, the Vallenar Bay Road, FDR 8110, and all other constructed road associated with the commercial forest operations on this sale. Construction materials such as rock, timber and stockpiled culvert on State land shall only be used on State or federal land on Gravina. The development or expansion of rock sources for use on the timber sale requires preapproval of the DOF.

Road use agreements required by the USFS and the Ketchikan Gateway Borough (KGB) have been satisfied by the State. All other agreements that may be required are the responsibility of the Purchaser.

The DOF has a use agreement in place with the KGB manager of the GIIC for the permitted LTF. The GIIC use agreement associated with the LTF established the fair-market use fee for the facility and the general terms of use acceptable to the KGB and the DOF. Actual use of the facility by the Purchaser requires the Purchaser to obtain a separate permit, lease, or agreement with the KGB through the Airport Manager's office as well as ACOE and APDES permits required for operation. The Purchaser is responsible for payment of the LTF use fee to the KGB.

The use of facilities outside USFS, State forest land or the state road easement on Ketchikan Gateway Borough lands associated with this sale requires a signed use agreement, or permit, or lease as is appropriate by the authority prior to the DOF review of the operating plan and start of operations. Purchaser shall adhere to all stipulations contained within all state and Federal permits for the facility(s) and roads, provide the DOF with copies of all pertinent information necessary for required permit reporting, and cover the cost of all permit(s) related fees and expenses.

BIDDING:

This is a SEALED BID SALE. To qualify for bidding, all bidders must submit a copy of their current Alaska Business License with their sealed bid. Sealed Bids must be submitted on forms provided by the Division of Forestry, marked on the outside with the timber sale name and number, and addressed to the Southern Southeast Area Office, Alaska Division of Forestry, 2417 Tongass Avenue, Suite 213, Ketchikan, AK 99901. Sealed Bids will be accepted until the bid opening, at 2:00 P.M. prevailing time, September 24, 2018. Sealed bids may also be presented in person to the Southeast Area Forester, before the bid opening. All bids must be in the physical possession of the Southeast Area Forester before the bid opening. Bidders are responsible for assuring that their complete bid package is delivered on time.

The State reserves the right to reject any or all bids. Unless all bids are rejected, the State will award the sale to the responsible qualified bidder offering the highest total bid for the timber as determined by the State using the State's bid sheet. The bidder will submit prices per MBF. The bidder's submitted price per MBF times the Division of Forestry's estimate of timber volume will be the minimum that the Purchaser will pay for the timber in the sale area regardless of the quantity of timber removed. The basis of the bid is on the merchantable saw log volume of Sitka spruce, western hemlock, western red cedar, and yellow cedar. In the final accounting of the contract, the successful bidder will be responsible for payment of the actual timber harvested as it was scaled or the minimum bid price, whichever is greater. The minimum acceptable total bid price for the timber is $3,217,708.00.

BIDS MUST BE SUBMITTED ON FORMS PROVIDED BY THE STATE AND CAN BE OBTAINED AT THE SOUTHEAST AREA OFFICE IN KETCHIKAN.

If a tie in the high sealed bid occurs, the successful bidder will be determined by lot at the time of bid opening.

If bidding as an agent for an individual, partnership, or corporation, the agent must submit with the bid a notarized power-of-attorney authorizing such agency. No agent may represent more than one principal, or bid in competition with the agent's principal.

BID GUARANTEE:

A deposit in the amount of 5% of the total bid will be required at the time bids are submitted. The successful bidder's deposit will be credited as the Advanced Stumpage Payment due to the

State. Deposits from unsuccessful bidders will be returned at the time the sale is awarded. The deposit furnished by the high bidder whose bid was declared acceptable will be retained as liquidated damages if the bidder does not sign the contract, and furnish a satisfactory performance bond within 30 days of receipt of the contract. The 5% bid deposit shall be in the form of certified check, cashier's check, money order, or any combination of these.

PERIOD OF CONTRACT:

All contract obligations shall be completed within three years from execution of the contract. In order to protect water, soil, or environmental quality, the State reserves the right to temporarily suspend operations.

BONDS:

A Performance Bond will be deposited with the State upon execution of this contract. The amount of the Performance Bond will be $160,000.00.

The PURCHASER shall deposit the bond with the State either in the form of a cashier's check or money order made payable to the STATE or as a certificate of deposit with all rights except the interest assigned to the State. If the bond is in the form of cash or check the STATE shall place the Performance Bond in a separate State account and all interest on the Performance Deposit shall accrue to the benefit of STATE.

PAYMENT:

Subsequent payments will be based on a total monthly scale with stumpage payment due to the State prior to 15th of each month for the previous month's scale. The Advance Stumpage Payment will be applied to the last stumpage payment or combination of payments depending upon the Purchaser's current operation plan.

OTHER CONTRACT REQUIREMENTS AND STIPULATIONS:

The Purchaser will have 30 days from the receipt of the contract to sign, notarize, and return it to the Southeast Area Forester.

The old growth volumes harvested within this sale shall be 100% scaled. Second growth timber may be sample scaled using a method mutually acceptable to the DOF and the purchaser by which timber volume can be tracked and verified as to quantity and price. Volume harvested from Units 2, 10, 11,12,14, and 15 are to be considered second growth; all other units are considered old growth units for accounting of the timber sale volume.

Volume harvested from the sale shall be reported per the contract to meet State and Federal requirements as outlined in the sample contract.

Camp facilities associated with the timber sale are not allowed on State Forest or USFS land. A watchman's camp and maintenance area may be considered by the DOF with adequate

provisions for maintaining public safety and the intent of the management plan on State Forest land.

Wood waste from log processing associated with the processing of State or federal wood from Gravina Island at the GIIC LTF is authorized for disposal (subsequent to the approval of a site plan) on the downhill side of the rock pit on State Forest land at approximately Mile 3.5 of the Vallenar Bay Road.

Access to the sale area is adjacent to numerous private properties. All operations associated with the timber sale shall respect the existing uses in the area and accommodate incidental traffic when not at risk by the direct actions associated with the timber harvest. Public traffic may be discouraged by the PURCHASER from using the road during active hauling of equipment, rock, and logs. Traffic may only be discouraged on portions of the road directly affected by active operations. Closure of the road shall only be done with the authorization of the DOF.

The sale will require the construction, maintenance and closure of roads as identified above and in accordance with the contract.

OPERATING PLAN:

An Operating Plan is required to be submitted 2 weeks in advanced of the start of operations; within 5 business day after receipt, the plan will be reviewed by the State for compliance with appropriate management plans, the sale contract, and the State's best interest. The requirements of the Operating Plan are set out in the contract and will reflect the Purchaser's plans and operations at all times.

The Operating Plan must comply with the requirements of the Alaska Forest Resources and Practices Act (FRPA) under AS 41.17, the Alaska Land Act under AS 38.05, and 11 AAC 71.300. The Operating Plan must provide the STATE with sufficient information to allow the STATE to understand the Timber Operations, as they will occur in the field. The Operating Plan must include areas of concern identified by the PURCHASER, including any potential conflicts with FRPA, the FLUP or the EA.

PRIMARY MANUFACTURE:

Primary manufacture of logs from this sale is not required.

RESERVATIONS:

The State reserves the right to waive technical defects in this Prospectus and reject any and all bids and, unless all bids are rejected, the sale will be awarded to the responsible qualified bidder offering the highest bid. The State reserves the right to award the timber for the amount of the next highest bidder if the Director considers the highest bidder unqualified to fulfill the requirements of the contract, or if the contract is not executed by the highest bidder. The State also reserves the right to waive any informality in the bids received whenever the waiver is in the best interests of the State. The State will reject a bid containing or submitted with a condition or

qualification on or a material alteration of the terms as specified in the notice of sale, or which is not in accordance with the law.

DISCLAIMER:
This Prospectus is subject to the following disclaimers:

The information provided in the prospectus is only general background information. The bidder has full and unrestricted access to the sale area, and has the full and unlimited opportunity to closely inspect the property, timber access, infrastructure, and operating conditions and has evaluated options available for transporting logs, fuel, equipment and material; and the bidder is knowledgeable of timber and is relying solely upon its own expertise or that of its consultants.

The bidder assumes each, every and all risk with regard to the sale and purchase of timber from the DOF.

The bidder accepts full responsibility for determining stand characteristics, timber volume and species composition, harvest unit terrain, harvest system requirements and operational conditions as they pertain to the bidder's markets, needs, equipment and other resources.

The bidder may not rely in any manner upon any representation by the DOF or any of its employees or representatives outside the provisions of this prospectus or the terms and conditions of the draft contract, for any purpose, including the interpretation of any provision of the prospectus or compliance with the requirements of the prospectus. No amendment of this prospectus may be made orally.

The maps provided with this prospectus are approximate and no guarantee or warranty is made as to their accuracy. It is the bidder's responsibility to examine the sale area and take such other steps as may be necessary to ascertain the exact character and location of the sale area, the general and local conditions which can affect this project, and to satisfy itself as to quantities and quality of timber present.

The DOF believes the statements in this prospectus are substantially accurate. However, the DOF cannot and does not make any warranties or representations of any kind or character, expressed or implied, as to the availability, quantity, quality, harvestability, merchantability, fitness for a particular use or purpose, matters of title, physical conditions, availability of access, operating projections, valuations, governmental regulations, or any other matter concerning the timber offered here in for sale. The composition of the timber offered for sale is not warranted for grade, size, density defect, taper or any other stand or log component. The DOF will not be liable under any circumstances for any damages relating to the purchase or use of such timber or any infrastructure or for any special, consequential or incidental damages. The DOF will not be liable for and will not pay any costs incurred due to the rejection for any reason of any or all bids, cancelation of this bid, the successful bidder's failure to execute the Contract or any other reason, including fault of DOF or its representatives.

FEDERAL REQUIREMENTS:

This sale may be suspended or canceled if the Forest Service is required to interrupt or cancel operations due to court order or to comply with NEPA or other legal sanctions.

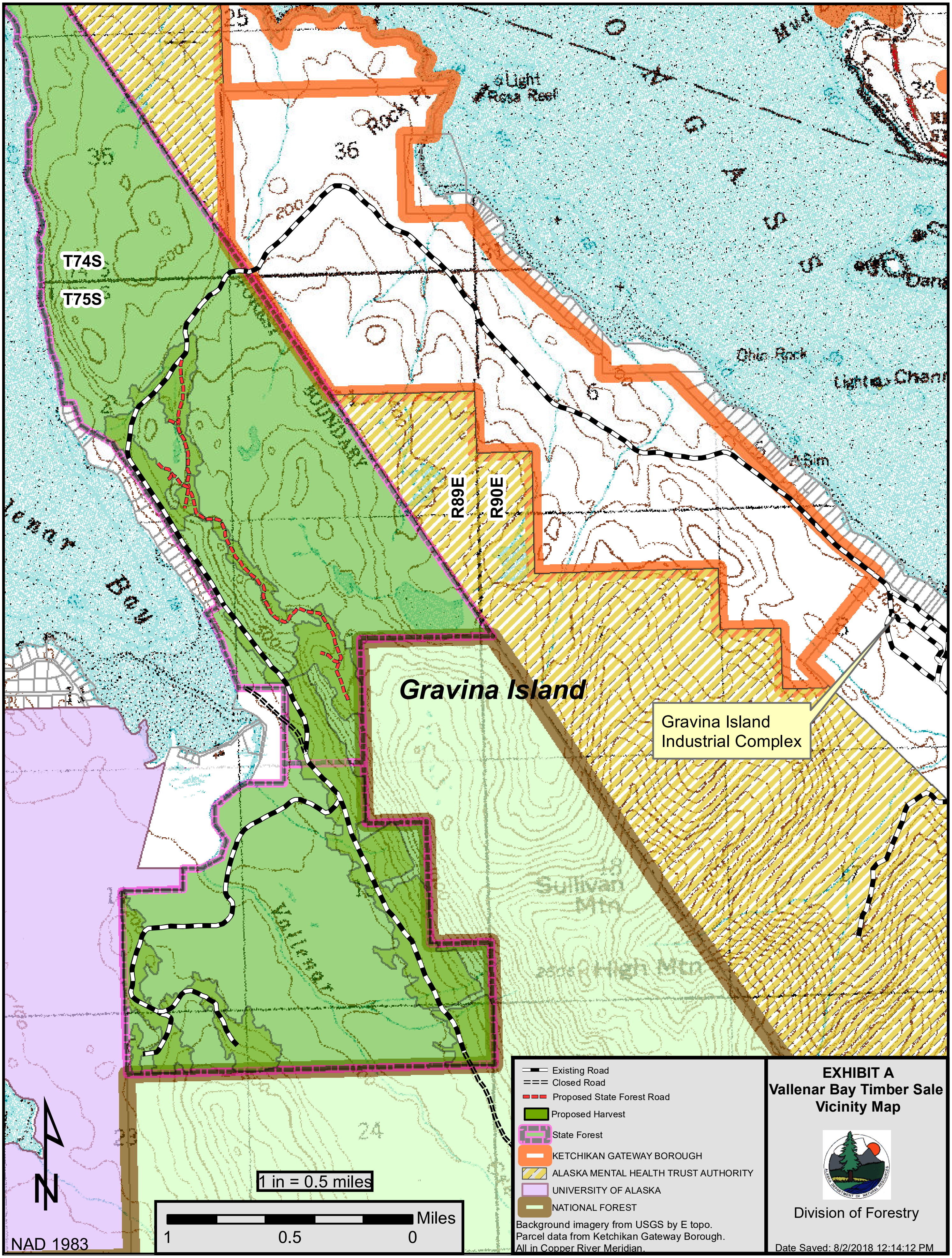
The purchaser and purchaser's subcontractors shall provide certification regarding debarment, suspension, ineligibility, and voluntary exclusion (AD-1048).

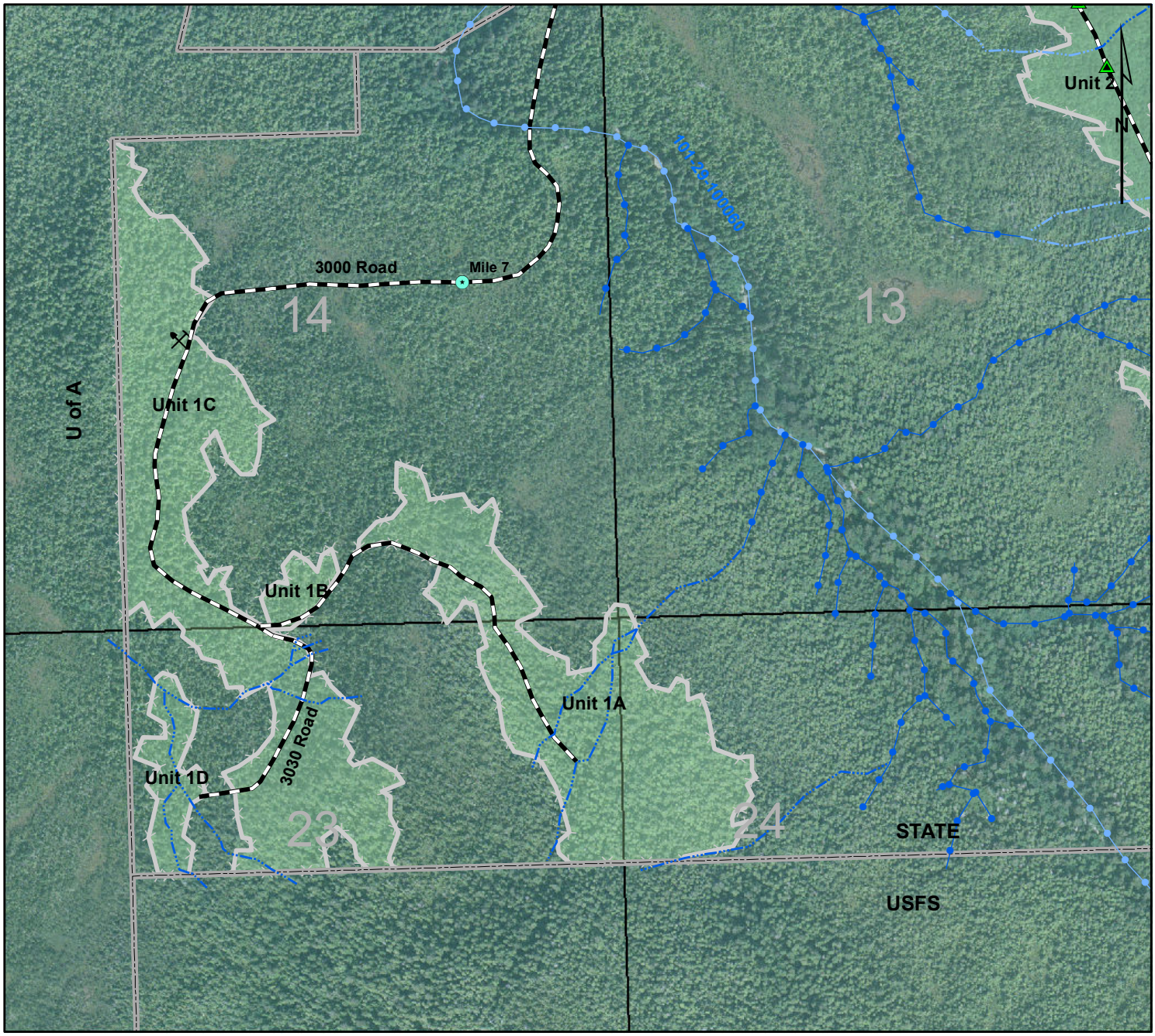
The State will not conduct business under this agreement with corporations or principals that have been convicted of a felony criminal violation under any Federal Law within the preceding 24 months and or have unpaid Federal tax liability. Corporations or their principles subject to this requirement shall provide the appropriate certifications.

GENERAL:

Further information, including copies of this Prospectus, Bid Form, Timber Sale Cruise, and a sample contract may be obtained by writing to Area Forester at the Southeast Area Office, Alaska Division of Forestry, 2417 Tongass Avenue, Suite 213, Ketchikan, AK 99901, or by calling (907) 225-3070. The information and documents may also be picked up in person by visiting the Southeast Area Office.

Attachment A
Vicinity Map 1 Page
Unit Maps 7 Pages


T74S
T75S
R89E
R90E
Gravina Island
Gravina Island Industrial Complex
Light Rosa Reef
Ohio Rock
BOUNDARY
Sullivan Mtn
High Mtn
1 in = 0.5 miles
Miles
1
0.5
0
NAD 1983
Existing Road
Closed Road
Proposed State Forest Road
Proposed Harvest
State Forest
KETCHIKAN GATEWAY BOROUGH
ALASKA MENTAL HEALTH TRUST AUTHORITY
UNIVERSITY OF ALASKA
NATIONAL FOREST
Background imagery from USGS by E topo.
Parcel data from Ketchikan Gateway Borough.
All in Copper River Meridian.
EXHIBIT A
Vallenar Bay Timber Sale
Vicinity Map
Division of Forestry
Date Saved: 8/2/2018 12:14:12 PM



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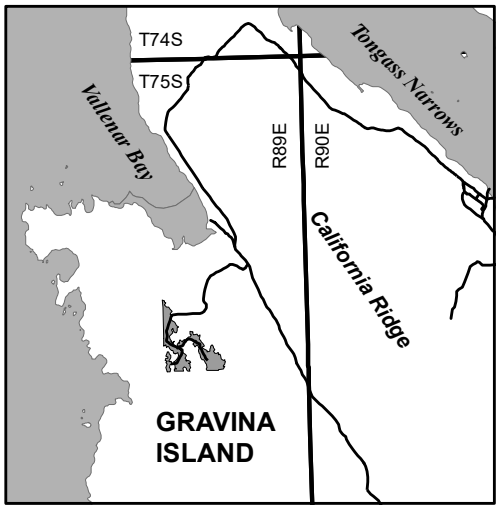
1 inch = 800 feet

T75S R89E
Sections 12, 13, 14 and 24 CRM

Contour Interval = 25 feet



Map Location 1 in = 2 miles

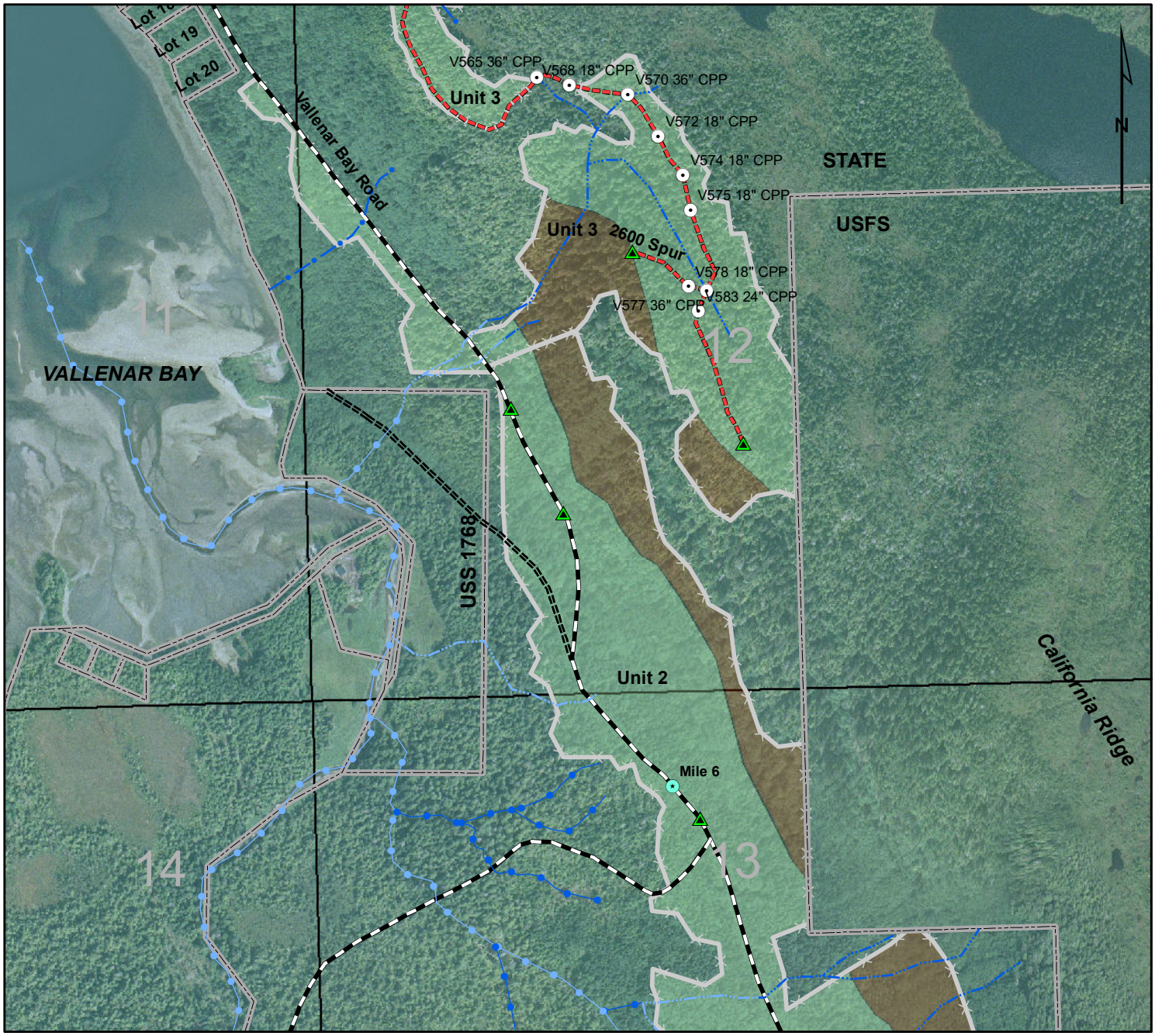
Legend

- Eagle Nest
- Drainage Structures
- Rock Pits
- Proposed Tower Landing
- Proposed Forest Road
- Existing Road
- Closed Road
- Property Line
- Proposed Harvest Units
- Cable Logging
- Shovel Logging
- Catologed Anadromous
- Non Catologed Anadromous
- Water Quality Class C
- Water Quality Class D
- General Water Quality

EXHIBIT F
SSE-1345K
VALLENAR BAY
TIMBER SALE
Unit 1

DIVISION OF FORESTRY

Date: 8/20/2018 PL



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1 inch = 800 feet

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Sections 12, 13, 14 and 24 CRM

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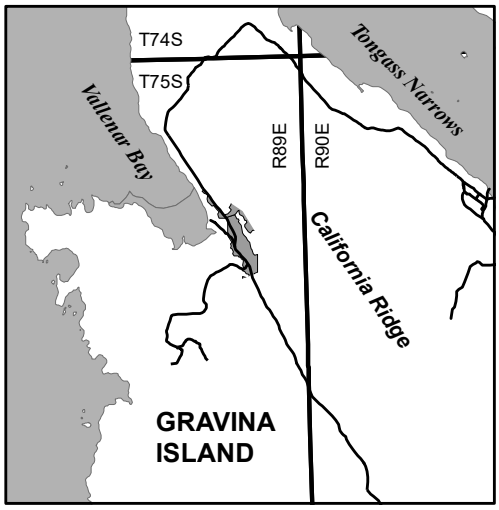


Map Location 1 in = 2 miles

Legend

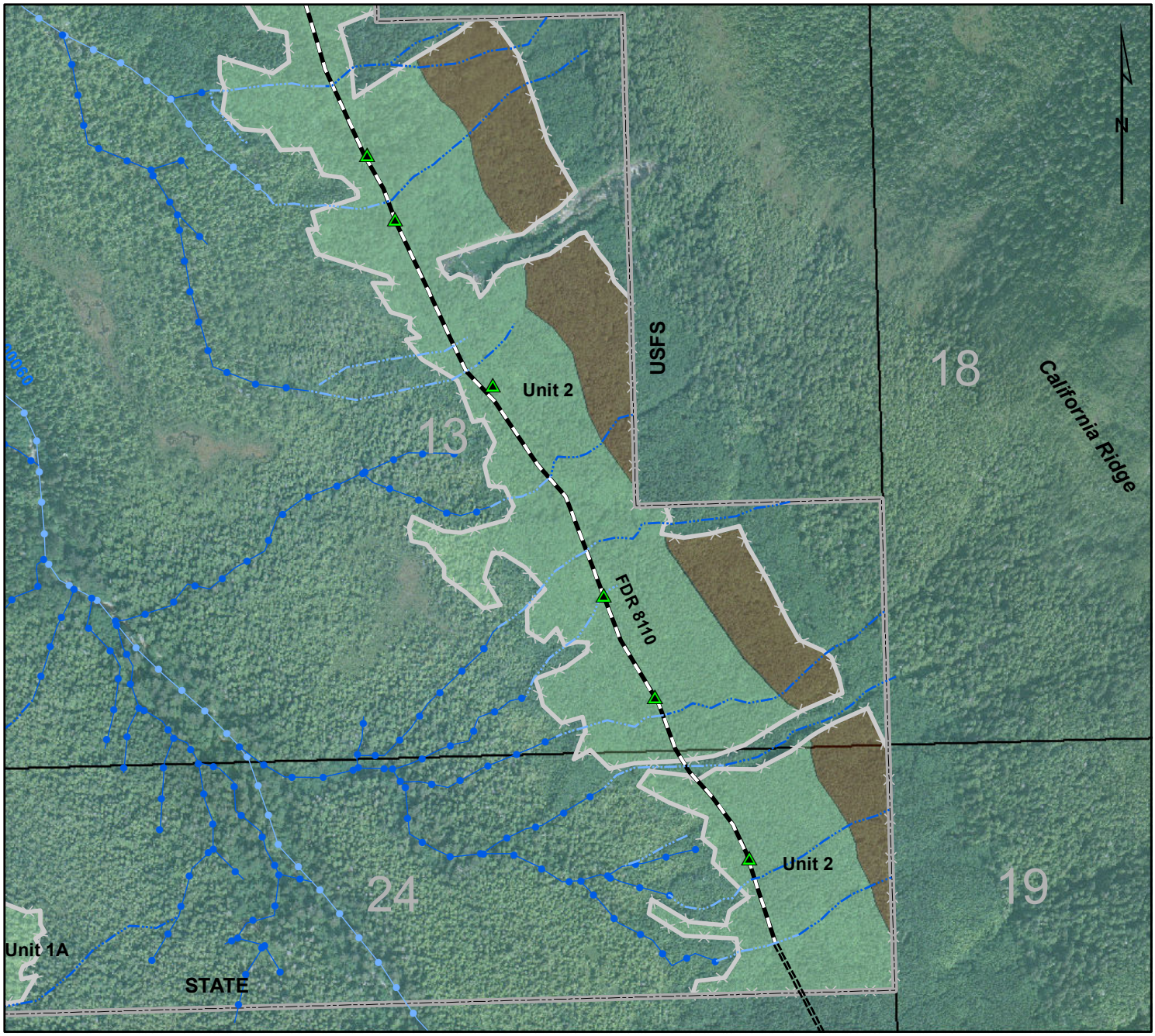
- Eagle Nest
- Drainage Structures
- Rock Pits
- Proposed Tower Landing
- Proposed Forest Road
- Existing Road
- Closed Road
- Property Line
- Proposed Harvest Units
- Cable Logging
- Shovel Logging
- Catologed Anadromous
- Non Catologed Anadromous
- Water Quality Class C
- Water Quality Class D
- General Water Quality

EXHIBIT F
SSE-1345K
VALLENAR BAY TIMBER SALE
Unit 2 North

ALASKA DEPARTMENT OF NATURAL RESOURCES

DIVISION OF FORESTRY

Date: 8/20/2018 PL



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Sections 12, 13, 14 and 24 CRM

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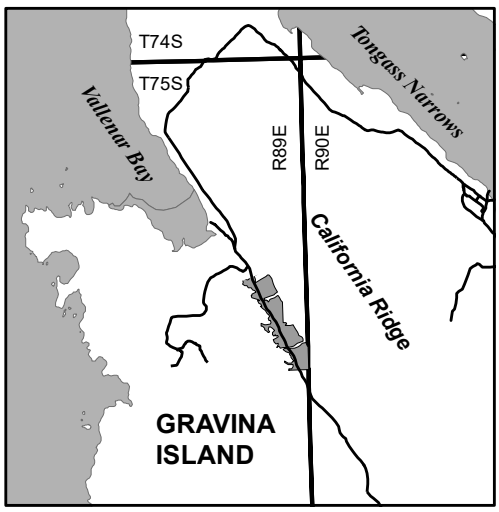


Map Location 1 in = 2 miles

Legend

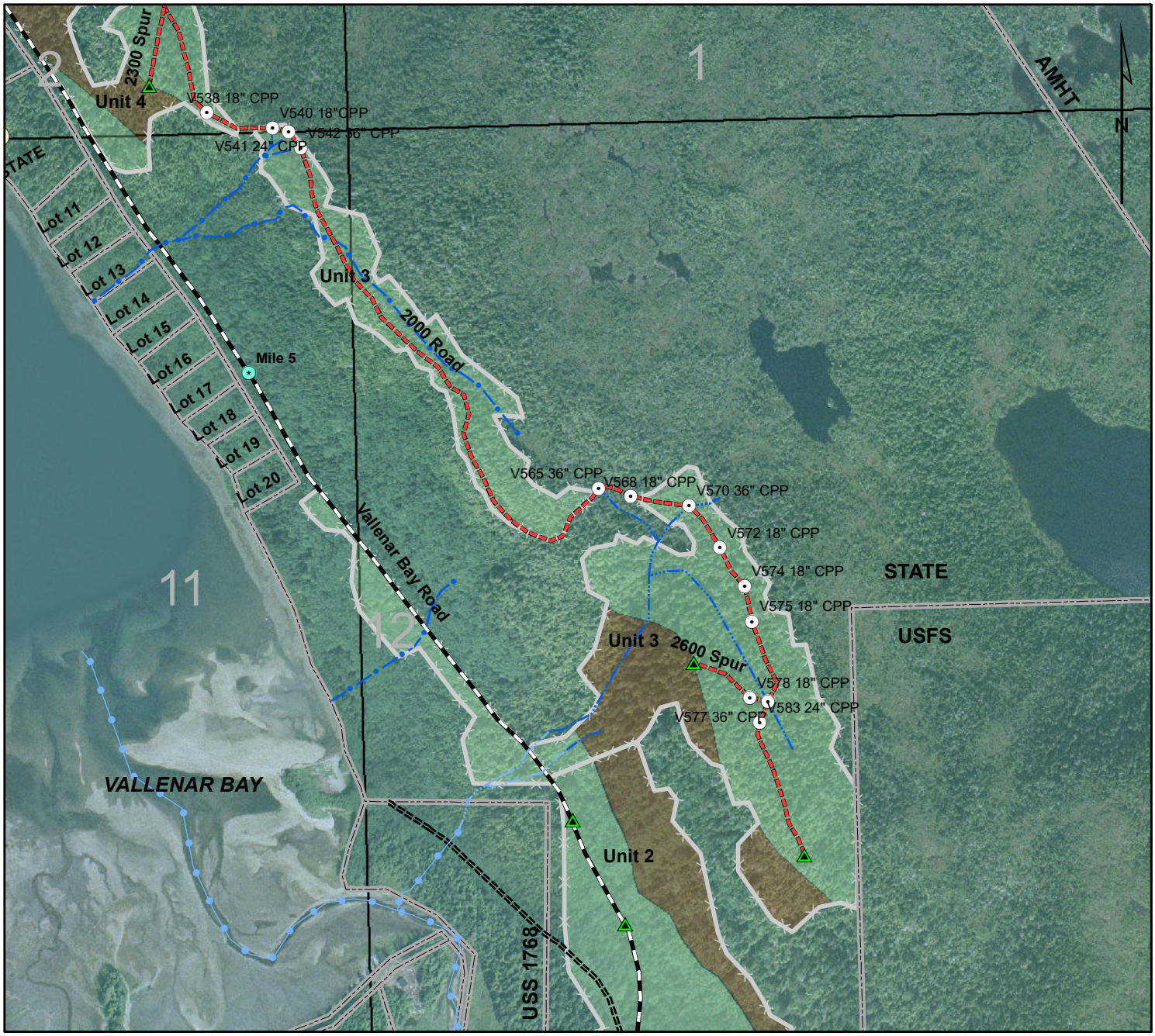
- Eagle Nest
- Drainage Structures
- Rock Pits
- Proposed Tower Landing
- Proposed Forest Road
- Existing Road
- Closed Road
- Property Line
- Proposed Harvest Units
- Cable Logging
- Shovel Logging
- Catologed Anadromous
- Non Catologed Anadromous
- Water Quality Class C
- Water Quality Class D
- General Water Quality

EXHIBIT F
SSE-1345K
VALLENAR BAY
TIMBER SALE
Unit 2 South

ALASKA DEPARTMENT OF NATURAL RESOURCES

DIVISION OF FORESTRY

Date: 8/20/2018 PL



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T75S R89E
Sections 12, 13, 14 and 24 CRM

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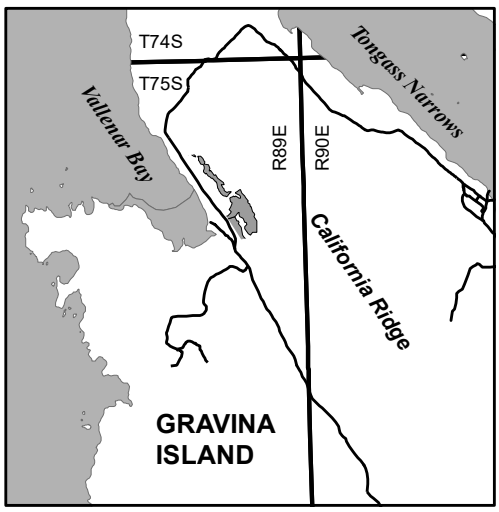


Map Location 1 in = 2 miles

Legend

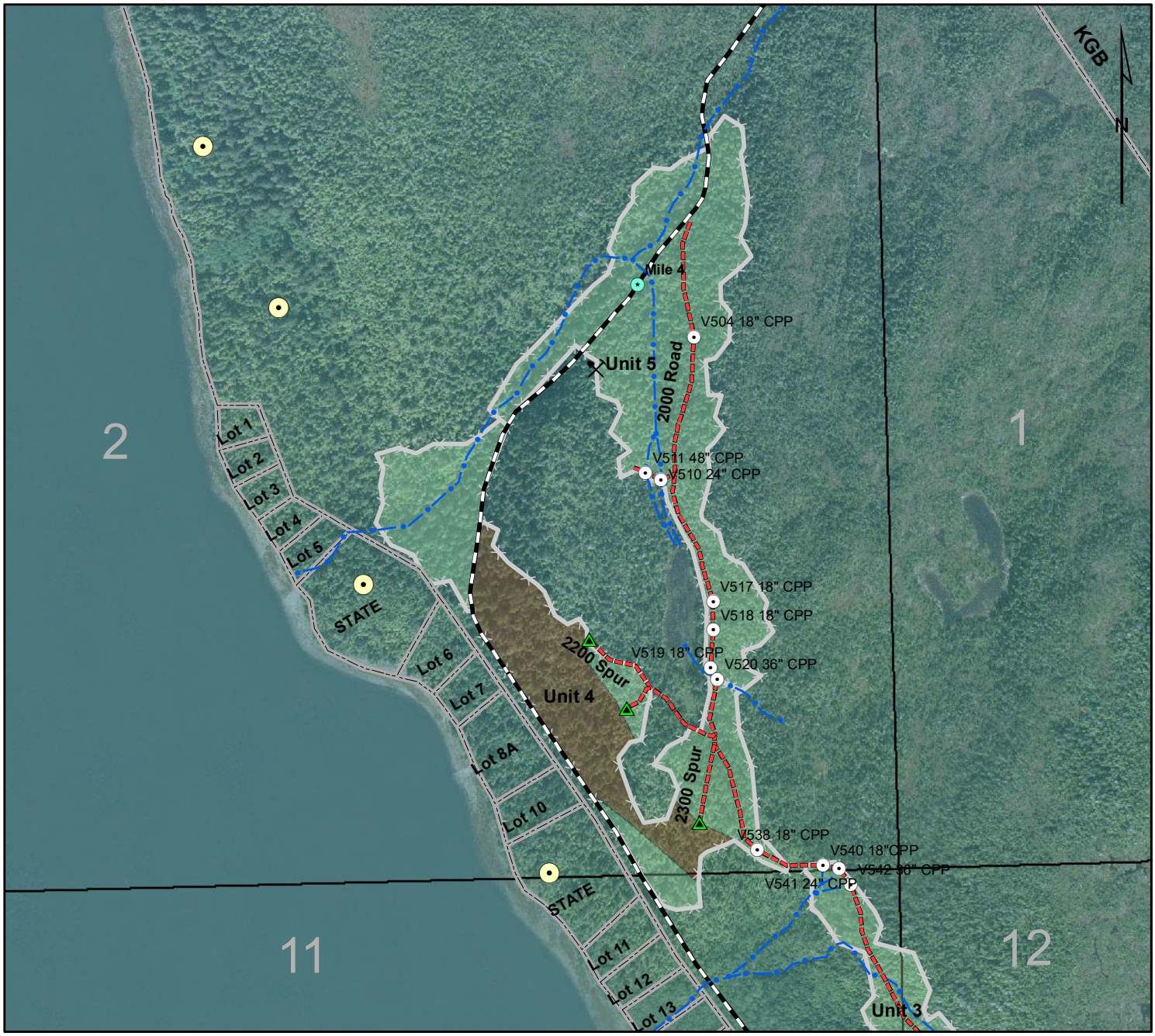
- Eagle Nest
- Drainage Structures
- Rock Pits
- Proposed Tower Landing
- Proposed Forest Road
- Existing Road
- Closed Road
- Property Line
- Proposed Harvest Units
- Cable Logging
- Shovel Logging
- Catologed Anadromous
- Non Catologed Anadromous
- Water Quality Class C
- Water Quality Class D
- General Water Quality

EXHIBIT F
SSE-1345K
VALLENAR BAY
TIMBER SALE
Unit 3

ALASKA DEPARTMENT OF NATURAL RESOURCES

DIVISION OF FORESTRY

Date: 8/20/2018 PL



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T75S R89E
Sections 12, 13, 14 and 24 CRM

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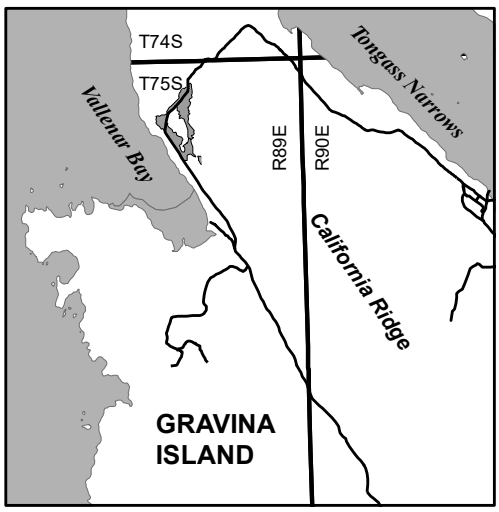


Map Location 1 in = 2 miles

Legend

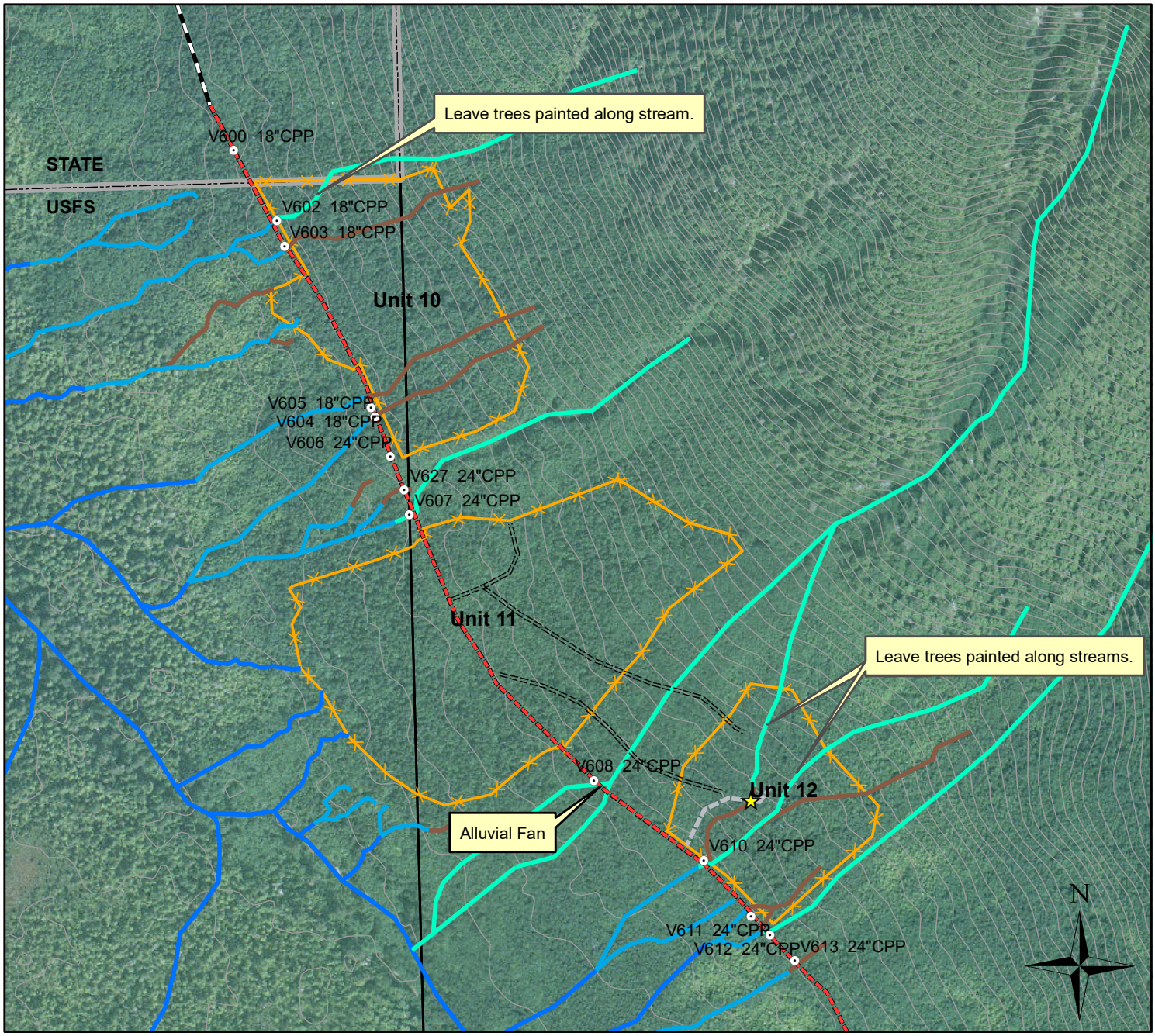
- Eagle Nest
- Drainage Structures
- Rock Pits
- Proposed Tower Landing
- Proposed Forest Road
- Existing Road
- Closed Road
- Property Line
- Proposed Harvest Units
- Cable Logging
- Shovel Logging
- Catologed Anadromous
- Non Catologed Anadromous
- Water Quality Class C
- Water Quality Class D
- General Water Quality

EXHIBIT F
SSE-1345K
VALLENAR BAY
TIMBER SALE
Unit 4 & 5

ALASKA DEPARTMENT OF NATURAL RESOURCES

DIVISION OF FORESTRY

Date: 8/20/2018 PL



Feet
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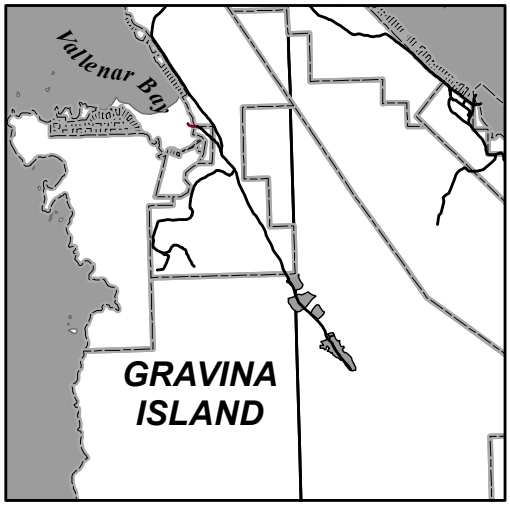
1 inch = 500 feet

T75S, R89E Section 24,
T75S, R90E Sections 19 and 30
CRM

Contour Interval = 25 feet



Vicinity Map 1 in = 2 miles

Legend

- Drainage Structure
- Shovel Crossing
- Proposed Timber Harvest
- Existing Road
- Proposed Road Reconstruction
- Existing Skid Road
- Anticipated Shovel Trail

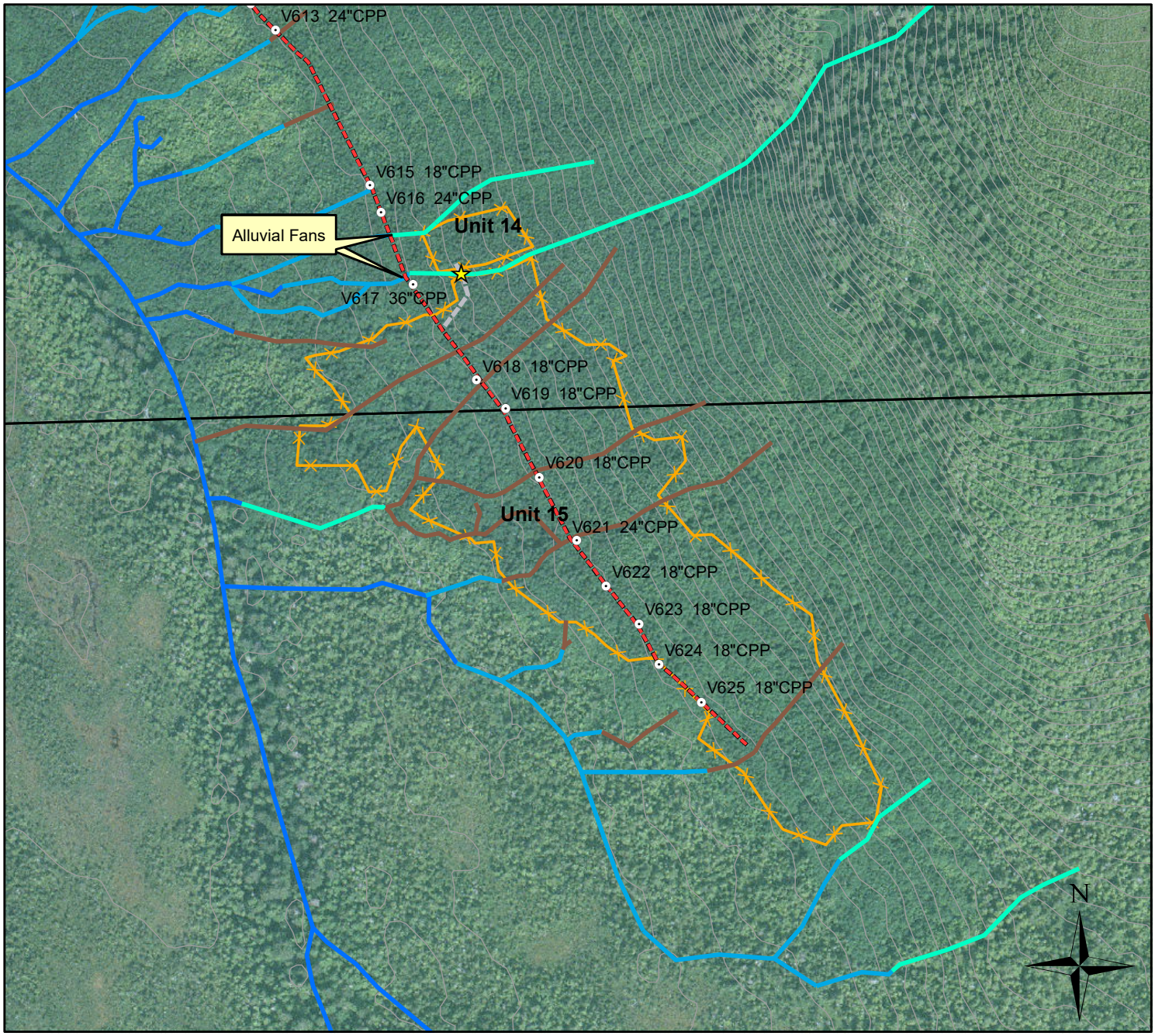
USFS Stream Class

- 1
- 2
- 3
- 4

EXHIBIT B
SSE-1356-K
VALLENAR BAY
USFS TIMBER SALE
AREA MAP
Page 1 of 2

DIVISION OF FORESTRY

Date: 8/24/2018 PL



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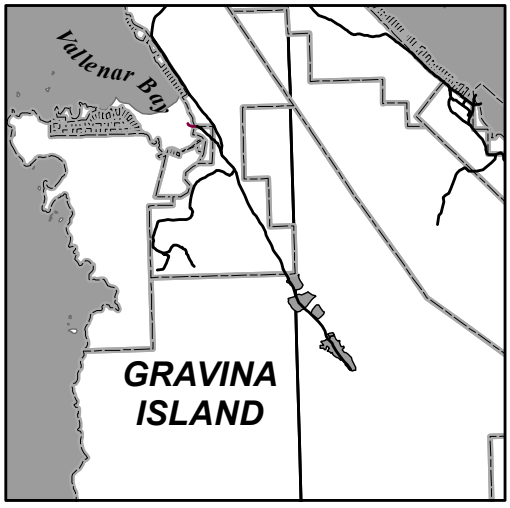
1 inch = 500 feet

T75S, R89E Section 24,
T75S, R90E Sections 19 and 30
CRM

Contour Interval = 25 feet



Vicinity Map 1 in = 2 miles

Legend

- Drainage Structure
- Shovel Crossing
- Proposed Timber Harvest
- Existing Road
- Proposed Road Reconstruction
- Existing Skid Road
- Anticipated Shovel Trail

USFS Stream Class

- 1
- 2
- 3
- 4

EXHIBIT B
SSE-1356-K
VALLENAR BAY
USFS TIMBER SALE
AREA MAP
Page 2 of 2

ALASKA DEPARTMENT OF NATURAL RESOURCES

DIVISION OF FORESTRY

Date: 8/24/2018 PL

Attachment B
Timber Cruise Reports

USDA United States Department of Agriculture Forest Service Alaska Region
P.O. Box 21628
Juneau, AK 99802-1628

File Code: 2430
Date: JUL 27 2018

Mr. Jim Eleazer
Good Neighbor Agreement Project Manager
State of Alaska, Division of Forestry
550 W. Seventh Ave, Suite 1450
Anchorage, AK 99501

Dear Mr. Eleazer,

I have received your request to export 100 % of the young growth timber included in the Vallenar project to be implemented under the Good Neighbor-Special Project Agreement (GNA) #18-GN-11100552-12, between the Tongass National Forest and the State of Alaska.

I concur with the projection that Vallenar will not produce a positive value timber sale if domestic processing is required. Although there are many uses for this particular resource, domestic markets in Alaska have not developed to the point where purchasers can profitably manufacture products from young growth timber. The successful completion of this GNA project will provide valuable knowledge of the profitable harvesting of young growth in various silvicultural prescriptions across the Tongass.

This letter serves as approval to appraise and offer the Vallenar GNA project with 100% export values for the included young growth timber. Upon award of the contract, the purchaser of the sale will be required to apply to me for an export permit that will be issued directly to the individual or company, as required by the Alaska Region's process for tracking and reporting timber harvested from National Forest lands.

Please contact Dave Harris, Director of Forest Management, with any questions pertaining to this process or the direction contained herein. Dave can be contacted by phone at 907-586-7875 or by email at dpharris@fs.fed.us.

Sincerely,

for DAVID E. SCHMID
Acting Regional Forester

cc: Jim Eleazer, Paul Slenkamp, Earl Stewart, Troy Heitheckerker, Susan Howle, Charles Streuli, Ted Sandhofer

Vallenar Bay Timber Sale Cruise Notes

August 24, 2018

DOF Vallenar Old Growth Timber Cruise

Sample Type/ Frequency

The units were cruised using an unbiased grid system with 5 x 2 chain spacing representing one acre per cruise plot in units 3, 4, and 5. A 3X3 chain spacing, yielding 0.9 acres per plot was used in unit 1. This combined layout produced 192 cruise plots over 206 acres. A variable plot cruise based on the Atterbury Cruise Program was used to manage the data. A basal area factor of 40 BAF was used to sample trees. Sample trees were determined in or out at 16 feet. Obvious cull trees were not recorded. This obtained an average of 4.3 trees per plot.

Min. Size/ Sorts/ Spec.

Only trees meeting minimum sawlog specifications were sampled. Diameters measuring under 10 inches at four feet above stump height where not recorded. Sorts were developed based on perceived industry markets. See attached *ADNR-DOF Old Growth and Second Growth Sort Guidelines for Southeast Alaska*. Log grades were determined using *Official Log Scaling and Grading Rules*. All log volumes were determined using the Scribner scale rules applied and accepted in the Southeast Alaska region. Logs not meeting DOF sawlog sorts were recorded as pulp logs with the minimum size being a #4 sawlog; utility logs (having 50% sound usable chips) were also recorded.

Acreage

Cruised acreage was determined using ArcGIS, based off points collected along the harvest unit line using a GIS grade GPS receiver that was restricted to sampling positions when theoretical post processed accuracy was calculated to be less than 10 feet. ArcGIS calculated there to be 216 acres. 10 Acres where subtracted from the GIS acreage to compensate for the existing cleared ROW of the road to produce 206 acres used in the Atterbury Cruise Program to determine project volumes.

Stratification

Due to variability across the proposed harvest area, acreage was stratified by timber type. Unit 1A was divided into two types: Cedar (Type 9901) and Large Cedar/Hemlock (Type 9902). Units 1B, 1C, and 1D all were stratified into the Cedar Type 9902. Unit 3 was stratified into two types: Hemlock (Type 9903) and Spruce/Hemlock (Type 9904). Type 9903 is generally above the slope break in Units 3, 4, and 5. It is comprised primarily of lower grade hemlock with cedar and spruce also present. Type 9904 primarily is the steep hill side in Unit 3 and 4. This type has a higher composition of large-diameter spruce with hemlock and some cedar present. All of Unit 5 was stratified into Type 9903.

DOF Vallenar Second Growth Timber Cruise

Sample Type/ Frequency

The proposed stand was cruised using an unbiased grid system with 5 x 2.5 chain spacing representing 1.25 acres per cruise plot. This layout produced 162 cruise plots over 202 acres. A variable plot cruise based on the Atterbury Cruise Program was used to manage the data. A basal area factor of 40 BAF was used to sample trees. Due to an error in communication one cruiser used 16 feet and the other used 4 feet above the projected stump height to determine sample trees. The Atterbury program accounted for this difference in sample method. All trees were measured, no count plots were taken. Obvious cull trees were not recorded. This obtained an average of 5.6 trees per plot.

Min. Size/ Sorts/ Spec.

Only trees of meeting minimum sawlog specifications were sampled. Recorded diameters were measured at four feet above stump height. Sorts were developed based on perceived industry markets. Merchantable young growth spruce and hemlock generally fell into four sorts: Oversize, Standard, Gang, and Chip and Saw. Merchantable alders of sawlog quality were lumped into a camp run sort of all saw logs. Alder logs had to be a minimum of 8 inches in diameter and 24 feet in length. See attached *ADNR-DOF Second Growth Sort Guidelines for Southeast Alaska*. Log grades were determined using *Official Log Scaling and Grading Rules*. All log volumes were determined using the Scribner scale rules applied and accepted in the Southeast Alaska region. Logs not meeting DOF saw log sorts were recorded as pulp logs with the minimum size being a #4 sawlog; utility logs (50% having sound usable chips) were also recorded.

Note: Old growth sorts were recorded in several plots and are represented in the report.

Acreage

Cruised acreage was determined using ArcGIS, based off points collected along the harvest unit line using a GIS grade GPS receiver that was restricted to sampling positions when theoretical post processed accuracy was calculated to be less than 10 feet. ArcGIS calculated there to be 207 acres. 5 Acres where subtracted from the GIS acreage to compensate for the existing cleared ROW of the road to produce 202 acres used in the Atterbury Cruise Program to determine project volumes.

USFS GNA Vallenar Timber Cruise

Sample Type/ Frequency

The stand was cruised using an unbiased grid system with 5 x 2 chain spacing representing one acre per cruise plot. This layout produced 72 cruise plots over 73 acres. A variable plot cruise based on the Atterbury Cruise Program was used to manage the data. A basal area factor of 40 BAF was used to sample trees. Sample trees were determined in or out at 16 feet. Cull trees were not recorded. This obtained an average of 5.5 trees per plot.

Min. Size/ Sorts/ Spec.

Only trees meeting minimum sawlog specifications were sampled. Diameters measuring under 10 inches at four feet above stump height where not recorded. Sorts were developed based on perceived industry markets. Merchantable young growth spruce and hemlock generally fell into four sorts: Oversize, Standard, Gang, and Chip and Saw. Merchantable alders of sawlog quality were lumped into a camp run sort of all saw logs. Alder logs had to be a minimum of 8 inches in diameter and 24 feet in length. See attached *ADNR-DOF Second Growth Sort Guidelines for Southeast Alaska*. Log grades were determined using *Official Log Scaling and Grading Rules*. All log volumes were determined using the Scribner scale rules applied and accepted in the Southeast Alaska region. Logs not meeting DOF sawlog sorts were recorded as pulp logs with the minimum size being a #4 sawlog; utility logs (50% having sound usable chips) were also recorded.

Acreage and Retention Along Streams

Cruised acreage was determined using ArcGIS, based off points collected along the harvest unit line using a GIS grade GPS receiver that was restricted to sampling positions when theoretical post processed accuracy was calculated to be less than 10 feet.

Retention trees along Class 3 streams in Unit 10 and Unit 12 were selected and painted by Brock Martin (USFS). Greg Staunton (DOF) recorded species and diameters of selected retention trees. Board foot volumes of retention trees were calculated using stand table summary produced from the timber cruise. Total board foot volumes for the proposed harvest area were calculated by subtracting the retention bd. ft. volume from the total net MBF developed from SuperACE for the timber cruise.

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

All Old Growth Types are included (9901 through 9904)

T75S R89E S12 Ty9903
THRU
T75S R89E S2 Ty9904

Project: DOFVAL4

Acres 206.00

Date 8/23/2018

Time 2:54:13PM

Spp	S T	So Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 6-11	12-17	18-23	24+	Log Length 12-23	24-31	32-36	37-99	Average Log: Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
SS	SH	1S	2	34.6	291	190	39				100	22	55		23	29	41	1418	9.96	.1
SS	SH	SL	1	49.9	256	128	26				100	13		18	69	35	60	2928	23.44	.0
SS	D	2S			5	5	1		100				100			26	14	190	2.83	.0
SS	D	3S	2	3.7	150	144	30	59	29	4	8	17	15	11	58	32	11	134	1.59	1.1
SS	D	4S		9.6	37	33	7	100				55	17		28	21	7	35	0.75	.9
SS	HI	1S	16	5.8	1,430	1,348	278				100		17	54	30	34	35	1862	8.47	.7
SS	HI	2S	2	12.4	191	168	35			71	29		22	78		32	23	676	3.85	.2
SS	HI	S	1	2.8	114	111	23				100			46	54	37	27	1216	4.70	.1
SS	HI	SL	15	5.9	1,364	1,283	264				100		37	45	18	31	38	2050	9.66	.6
SS	J	2S			37	37	8			24	76	24	76			24	23	629	4.35	.1
SS	K	2S	16	4.4	1,399	1,337	275		17	13	70	3	10	40	46	34	20	691	3.84	1.9
SS	K	3S	7	5.6	689	650	134		44	21	35	4	18	52	26	31	17	390	2.81	1.7
SS	RS	1S	12	3.7	1,090	1,049	216				100		10	68	21	34	34	1808	7.71	.6
SS	RS	2S	20	5.2	1,852	1,756	362			20	80		18	43	38	33	27	1119	5.40	1.6
SS	PU	3S			5	5	1			100		100				17	19	250	4.14	.0
SS	PU	4S	1		16	16	3	100					100			25	7	40	0.59	.4
SS	PU	U	5	23.6	557	425	88		4	9	88	15	15	43	26	31	27	866	5.65	.5
SS	**Totals**		29	8.4	9,481	8,685	1,789	2	7	10	82	3	19	47	31	31	22	817	4.58	10.6
WH	SH	1S		29.6	35	25	5				100		100			26	31	810	6.15	.0
WH	SH	2S		33.1	47	31	6				100			100		36	31	1070	8.39	.0
WH	D	3S	12	5.0	1,749	1,662	342	88	6	4	2	1	14	27	57	37	8	83	0.77	20.1
WH	D	4S	12	3.2	1,638	1,585	326	98	2			11	31	27	32	30	7	49	0.55	32.7
WH	HI	1S	2	5.7	252	237	49				100		11	68	21	34	27	1112	5.39	.2
WH	HI	2S	1	1.3	170	167	35			100			34	66		30	20	514	3.11	.3
WH	HI	S	1	6.3	34	32	7			100				100		36	20	590	2.80	.1
WH	HI	PE		6.0	123	116	24				100			100		34	28	1161	5.22	.1
WH	J	2S	3	7.9	361	332	68		68	32			20	47	33	34	17	388	2.45	.9
WH	J	S		4.3	39	37	8		100						100	40	17	440	2.49	.1
WH	K	2S	23	8.4	3,319	3,042	627		73	17	10	1	14	47	38	34	14	259	1.84	11.7
WH	K	3S	13	6.8	1,823	1,700	350		89	8	4	3	35	42	19	30	13	195	1.58	8.7
WH	RS	1S	3	11.3	466	413	85				100		31	26	44	33	27	958	5.41	.4
WH	RS	2S	15	12.8	2,290	1,996	411			78	22		23	60	17	32	21	526	3.36	3.8
WH	PU	3S		32.7	36	24	5			100			100			26	21	330	4.00	.1
WH	PU	4S			6	6	1	100				100				16	7	20	0.38	.3
WH	PU	U	15	13.3	2,246	1,948	401	35	24	21	20	37	21	15	28	26	10	97	1.06	20.1
WH	**Totals**		44	8.7	14,633	13,353	2,751	28	34	23	15	7	22	39	31	31	10	134	1.12	99.6
RC	SC	3S	1	.9	158	156	32	84	16				11	18	71	35	8	89	1.70	1.7
RC	SC	4S	1		62	62	13	100				17	56	27		28	6	35	0.57	1.8
RC	L	2S		50.0	33	16	3				100	100				23	55	1630	21.22	.0
RC	L	3S	13	35.9	1,570	1,007	207			7	93	12	40	36	12	28	30	759	8.38	1.3
RC	M	3S	45	10.7	4,184	3,735	769		12	30	58	1	32	40	26	33	21	627	4.96	6.0
RC	M	2R	8	12.5	773	676	139			25	75	4	17	55	24	33	27	1013	7.28	.7
RC	RC	3S	27	23.7	2,890	2,206	454	12	23	28	37	17	36	27	21	31	16	270	3.05	8.2
RC	RC	4S	5	34.2	565	372	77	37	14	12	37	26	56	12	7	23	9	73	1.52	5.1
RC	**Totals**		27	19.6	10,234	8,231	1,696	7	13	25	56	8	34	35	22	30	15	333	3.42	24.8
YC	YC	1S	16	5.2	26	25	5				100	100				23	24	550	4.36	.0
YC	YC	2S	28	18.1	54	44	9		51	49			49	51		30	18	335	3.20	.1

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T75S R89E S12 Ty9903
THRU
T75S R89E S2 Ty9904

Project: **DOFVAL4**

Acres **206.00**

Date **8/23/2018**

Time **2:54:13PM**

Spp	S T	So Gr rt ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 6-11	12-17	18-23	24+	Log Length 12-23	24-31	32-36	37-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
YC	YC	3S	51	9.3	87	79	16	75		25		4	15	59	22	35	8	89	0.96	.9
YC	YC	4S	5		7	7	1	100				100				14	6	20	0.27	.3
YC	**Totals**		1	11.0	173	154	32	43	15	26	16	23	21	45	11	29	9	110	1.18	1.4
Totals				11.9	34,521	30,423	6,267	15	20	19	45	6	24	40	29	31	12	223	1.80	136.4

PROJECT STATISTICS

PROJECT DOFVAL4

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
75S	89E	12	345	9903	THR	206.00	192	814	S	W
75S	89E	2	34	9904						

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	192	814	4.2		
CRUISE	190	814	4.3	18,274	4.5
DBH COUNT					
REFOREST					
COUNT					
BLANKS	2				
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
W HMLK	383	65.3	18.0	54	27.2	115.4	14,633	13,353	3,501	3,500
RCDR OG	327	17.6	32.2	49	17.5	99.5	10,234	8,231	2,521	2,519
S SPRUCE	96	4.5	32.9	79	4.6	26.4	9,481	8,685	1,520	1,520
Y CDR	7	1.1	19.0	54	0.5	2.2	173	154	48	48
RD ALDER	1	.2	17.0	44	0.1	.3				
TOTAL	*814*	*88.7*	*22.4*	*54*	*51.5*	*243.8*	*34,521*	*30,423*	*7,591*	*7,587*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL 68.1 SD: 1.0 — **SAMPLE TREES - BF**

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
W HMLK	129.7	6.6	428	458	488			
RCDR OG	99.8	5.5	846	895	945			
S SPRUCE	91.6	9.3	3,500	3,861	4,221			
Y CDR	84.1	34.2	204	310	416			
RD ALDER								
TOTAL	*169.3*	*5.9*	*972*	*1,033*	*1,094*	*1,145*	*286*	*127*

CL 68.1 SD: 1.0 — **SAMPLE TREES - CF**

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
W HMLK	105.0	5.4	100	106	112			
RCDR OG	79.4	4.4	236	247	258			
S SPRUCE	88.3	9.0	595	653	712			
Y CDR	78.4	31.9	62	92	121			
RD ALDER								
TOTAL	*131.5*	*4.6*	*216*	*227*	*237*	*690*	*173*	*77*

CL 68.1 SD: 1.0 — **TREES/ACRE**

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
W HMLK	99.2	7.2	61	65	70			
RCDR OG	154.6	11.1	16	18	20			
S SPRUCE	219.1	15.8	4	4	5			
Y CDR	738.5	53.2	1	1	2			
RD ALDER	1385.6	99.9	0	0	0			
TOTAL	*73.2*	*5.3*	*84*	*89*	*93*	*214*	*53*	*24*

CL 68.1 SD: 1.0 — **BASAL AREA/ACRE**

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
W HMLK	94.1	6.8	108	115	123			
RCDR OG	116.6	8.4	91	99	108			
S SPRUCE	190.8	13.8	23	26	30			
Y CDR	665.3	48.0	1	2	3			
RD ALDER	1385.6	99.9	0	0	1			
TOTAL	*52.6*	*3.8*	*235*	*244*	*253*	*110*	*28*	*12*

TWP	RGE	SC	TRACT	TYPE		ACRES	PLOTS	TREES	CuFt	BdFt
75S	89E	12	345	9903	THR	206.00	192	814	S	W
75S	89E	2	34	9904						

CL 68.1 COEFF **NET BF/ACRE** # OF PLOTS REQ. INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
W HMLK	120.3	8.7	12,195	13,353	14,511			
RCDR OG	114.6	8.3	7,551	8,231	8,911			
S SPRUCE	223.6	16.1	7,285	8,685	10,085			
Y CDR	684.9	49.4	78	154	230			
RD ALDER								
TOTAL	*81.4*	*5.9*	*28,638*	*30,423*	*32,208*	*264*	*66*	*29*

CL 68.1 COEFF **NET CUFT FT/ACRE** # OF PLOTS REQ. INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
W HMLK	107.9	7.8	3,228	3,500	3,773			
RCDR OG	118.8	8.6	2,303	2,519	2,735			
S SPRUCE	210.0	15.1	1,290	1,520	1,750			
Y CDR	688.4	49.6	24	48	72			
RD ALDER								
TOTAL	*64.3*	*4.6*	*7,235*	*7,587*	*7,939*	*165*	*41*	*18*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: DOFVAL4

Date 8/23/2018

Time 2:59:46PM

T75S R89E S14 T9901

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
75S	89E	14	1	9901	18.00	21	83	S	W

T75S R89E S14 T9901

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 6-11	12-17	18-23	24+	Log Length 12-23	24-31	32-36	37-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
RC		SC	3S		14.3	118	101	2	100							100	37	7	60	1.02	1.7
RC		L	3S	10	45.1	2,457	1,349	24				100	10	49	15	26	29	35	1022	9.99	1.3
RC		M	3S	50	9.4	7,548	6,839	123			14	86		53	47		32	29	1130	6.77	6.1
RC		RC	3S	39	27.5	7,450	5,399	97	3	15	25	57	20	34	37	9	31	21	451	4.04	12.0
RC		RC	4S	1	25.0	26	20	0	100				100				22	8	30	0.87	.7
RC	**Totals**			53	22.1	17,600	13,708	247	2	6	17	75	9	45	40	7	31	22	633	4.80	21.7
WH		D	3S	37	2.7	2,877	2,798	50	96	4				4	26	71	38	7	76	0.63	36.9
WH		D	4S	10		764	764	14	100				5	31	64		30	6	40	0.46	19.0
WH		K	2S	39	3.4	3,002	2,901	52		100					34	66	38	13	216	1.46	13.4
WH		PU	4S	1		66	66	1	100				100				16	7	20	0.38	3.3
WH		PU	U	13	14.1	1,088	935	17	30	36	34		13		5	82	33	11	143	1.20	6.5
WH	**Totals**			29	4.3	7,797	7,464	134	51	45	4		3	5	30	63	35	8	94	0.79	79.1
SS		SH	1S	4	30.0	335	235	4				100		100			26	34	910	7.50	.3
SS		D	2S	2		57	57	1		100				100			26	14	190	2.83	.3
SS		D	3S	4	7.0	205	190	3	73	27				61		39	31	9	80	1.16	2.4
SS		HI	1S	26	2.2	1,306	1,277	23				100		28	72		33	33	1577	6.79	.8
SS		HI	SL	10	6.1	478	449	8				100			100		33	46	3070	13.14	.1
SS		K	2S	4	29.7	260	183	3				100				100	40	24	710	4.72	.3
SS		K	3S	10	10.9	571	509	9		68		32			68	32	36	17	416	2.49	1.2
SS		RS	2S	23	2.6	1,082	1,054	19			36	64		28	72		31	22	661	3.21	1.6
SS		PU	U	17	10.0	892	803	14				100			100		35	40	2290	9.77	.4
SS	**Totals**			18	8.3	5,185	4,755	86	3	10	8	80		22	69	9	32	20	650	3.56	7.3
Type Totals					15.2	30,582	25,927	467	16	18	12	54	6	29	42	23	34	12	240	1.70	108.0

TC TSTATS

STATISTICS

PAGE 1

PROJECT DOFVAL4

DATE 8/23/2018

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
75S	**89E**	**14**	**1**	**9901**	18.00	21	83	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	21	83	4.0		
CRUISE	20	83	4.2	1,399	5.9
DBH COUNT					
REFOREST					
COUNT					
BLANKS	1				
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
RCDR OG	46	14.4	37.8	54	18.2	111.7	17,600	13,708	3,250	3,250
W HMLK	30	60.1	15.2	53	19.5	75.9	7,797	7,464	2,181	2,178
S SPRUCE	7	3.3	30.1	76	2.9	16.1	5,185	4,755	841	841
TOTAL	*83*	*77.7*	*21.9*	*54*	*43.5*	*203.7*	*30,582*	*25,927*	*6,272*	*6,269*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 % COEFF — **SAMPLE TREES - BF** — # OF TREES REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
RCDR OG	68.5	10.1	1,210	1,345	1,481			
W HMLK	81.2	15.1	148	175	201			
S SPRUCE	83.5	34.0	1,780	2,697	3,614			
TOTAL	*114.4*	*12.5*	*906*	*1,036*	*1,166*	*523*	*131*	*58*

CL: 68.1 % COEFF — **SAMPLE TREES - CF** — # OF TREES REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
RCDR OG	59.2	8.7	286	313	340			
W HMLK	71.0	13.2	43	50	56			
S SPRUCE	72.2	29.4	313	443	573			
TOTAL	*94.2*	*10.3*	*205*	*229*	*252*	*354*	*89*	*39*

CL: 68.1 % COEFF — **TREES/ACRE** — # OF PLOTS REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
RCDR OG	90.9	20.3	11	14	17			
W HMLK	102.6	22.9	46	60	74			
S SPRUCE	210.6	47.1	2	3	5			
TOTAL	*80.6*	*18.0*	*64*	*78*	*92*	*273*	*68*	*30*

CL: 68.1 % COEFF — **BASAL AREA/ACRE** — # OF PLOTS REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
RCDR OG	69.5	15.5	94	112	129			
W HMLK	91.9	20.5	60	76	92			
S SPRUCE	196.4	43.9	9	16	23			
TOTAL	*52.1*	*11.6*	*180*	*204*	*227*	*114*	*28*	*13*

CL: 68.1 % COEFF — **NET BF/ACRE** — # OF PLOTS REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
RCDR OG	73.8	16.5	11,448	13,708	15,968			
W HMLK	118.7	26.5	5,484	7,464	9,444			
S SPRUCE	216.8	48.5	2,451	4,755	7,060			
TOTAL	*62.6*	*14.0*	*22,301*	*25,927*	*29,554*	*164*	*41*	*18*

CL: 68.1 % COEFF — **NET CUFT FT/ACRE** — # OF PLOTS REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
RCDR OG	71.4	16.0	2,731	3,250	3,769			
W HMLK	109.4	24.5	1,646	2,178	2,711			
S SPRUCE	206.2	46.1	453	841	1,228			

STATISTICS

PROJECT **DOFVAL4**

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
75S	**89E**	**14**	**1**	**9901**	18.00	21	83	S	W

CL: 68.1 %
SD: 1.0

	COEFF VAR.	S.E.%	NET CUFT FT/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
TOTAL	*56.1*	*12.5*	*5,484*	*6,269*	*7,055*	*132*	*33*	*15*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: DOFVAL4

Date 8/23/2018

Time 3:00:48PM

T75S R89E S14 T9902

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
75S	89E	14	1	9902	65.00	64	282	S	W

T75S R89E S14 T9902

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 6-11	12-17	18-23	24+	Log Length 12-23	24-31	32-36	37-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
RC		SC	3S	2		421	421	27	81	19				13	21	66	35	8	90	1.82	4.7
RC		SC	4S	1		168	168	11	100				20	48	32		28	6	34	0.55	4.9
RC		L	2S	1	50.0	104	52	3				100	100				23	55	1630	21.22	.0
RC		L	3S	7	35.5	1,823	1,176	76			1	99	14	39	36	12	26	30	720	9.28	1.6
RC		M	3S	51	10.3	8,630	7,744	503		8	38	54	2	30	33	35	33	22	660	5.43	11.7
RC		M	2R	5	6.0	917	862	56			22	78	9	31	12	48	34	31	1413	9.58	.6
RC		RC	3S	26	19.2	4,873	3,938	256	15	26	28	31	17	34	22	27	31	15	247	2.87	15.9
RC		RC	4S	7	37.2	1,586	996	65	32	14	15	39	23	58	14	5	24	9	77	1.63	12.9
RC	**Totals**			71	17.1	18,523	15,359	998	9	12	29	50	9	33	27	30	30	14	293	3.22	52.4
WH		D	3S	44	3.9	1,369	1,316	86	93	7				1	28	71	37	7	77	0.69	17.0
WH		D	4S	36	5.2	1,129	1,070	70	100				8	40	28	25	30	6	43	0.52	24.8
WH		K	2S	3		82	82	5		100						100	40	12	200	1.38	.4
WH		K	3S	8	16.3	310	260	17		100				44	18	38	30	13	165	1.63	1.6
WH		PU	U	9	6.4	261	244	16	81	19			26	26		48	29	8	56	0.92	4.3
WH	**Totals**			14	5.7	3,151	2,971	193	84	16			5	21	24	50	33	7	62	0.66	48.1
SS		D	3S	7	5.4	253	239	16	79	14	7		27	8	8	58	32	11	125	1.48	1.9
SS		D	4S	2	14.9	75	64	4	100				72	28			17	8	33	0.78	2.0
SS		HI	1S	6		153	153	10				100			100		36	36	2080	8.34	.1
SS		K	2S	15	5.5	485	458	30		46	34	20	2	37		61	33	18	409	2.32	1.1
SS		K	3S	29	5.3	961	910	59		23	17	60		8	43	49	34	19	546	2.93	1.7
SS		RS	2S	30	2.5	913	890	58			29	71			61	39	34	25	996	6.70	.9
SS		PU	4S	1		50	50	3	100					100			25	7	40	0.59	1.2
SS		PU	U	10	18.0	341	279	18		19	26	55		26	19	55	33	18	412	2.59	.7
SS	**Totals**			14	5.8	3,230	3,043	198	10	17	22	52	4	13	38	45	29	14	319	2.45	9.6
YC		YC	1S	32	5.2	83	78	5				100	100				23	24	550	4.36	.1
YC		YC	2S	28	11.1	76	68	4			100			100			26	20	400	3.71	.2
YC		YC	3S	40	21.1	121	96	6	36		64		11	25	64		29	12	169	2.28	.6
YC	**Totals**			1	13.7	280	242	16	14		53	32	37	38	25		27	15	275	2.83	.9
Type Totals					14.2	25,184	21,615	1,405	20	13	24	43	8	29	28	35	31	11	195	1.98	110.9

STATISTICS

PROJECT DOFVAL4

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
75S	89E	14	1	9902	65.00	64	282	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	64	282	4.4		
CRUISE	64	282	4.4	5,822	4.8
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
RCDR OG	207	38.7	31.1	46	36.5	203.4	18,523	15,359	5,016	5,009
W HMLK	51	43.5	14.1	42	12.5	47.1	3,151	2,971	1,045	1,044
S SPRUCE	19	5.5	24.2	54	3.6	17.5	3,230	3,043	675	674
Y CDR	4	1.3	22.8	58	0.8	3.8	280	242	67	67
RD ALDER	1	.6	17.0	44	0.2	.9				
TOTAL	*282*	*89.6*	*23.6*	*45*	*56.1*	*272.7*	*25,184*	*21,615*	*6,803*	*6,795*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 % COEFF — **SAMPLE TREES - BF** — # OF TREES REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
RCDR OG	103.0	7.2	728	784	840			
W HMLK	98.0	13.7	76	88	100			
S SPRUCE	102.0	24.0	825	1,086	1,347			
Y CDR	69.8	39.9	251	418	584			
RD ALDER								
TOTAL	*119.7*	*7.1*	*623*	*670*	*718*	*572*	*143*	*64*

CL: 68.1 % COEFF — **SAMPLE TREES - CF** — # OF TREES REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
RCDR OG	84.8	5.9	215	229	242			
W HMLK	74.0	10.4	26	29	32			
S SPRUCE	92.1	21.7	174	222	270			
Y CDR	68.9	39.4	71	117	163			
RD ALDER								
TOTAL	*100.6*	*6.0*	*178*	*190*	*201*	*404*	*101*	*45*

CL: 68.1 % COEFF — **TREES/ACRE** — # OF PLOTS REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
RCDR OG	96.3	12.0	34	39	43			
W HMLK	129.5	16.2	36	43	51			
S SPRUCE	249.4	31.1	4	6	7			
Y CDR	623.6	77.9	0	1	2			
RD ALDER	800.0	99.9	0	1	1			
TOTAL	*72.0*	*9.0*	*82*	*90*	*98*	*207*	*52*	*23*

CL: 68.1 % COEFF — **BASAL AREA/ACRE** — # OF PLOTS REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
RCDR OG	61.6	7.7	188	203	219			
W HMLK	138.4	17.3	39	47	55			
S SPRUCE	210.5	26.3	13	18	22			
Y CDR	499.0	62.3	1	4	6			
RD ALDER	800.0	99.9	0	1	2			
TOTAL	*56.0*	*7.0*	*254*	*273*	*292*	*125*	*31*	*14*

STATISTICS

PROJECT **DOFVAL4**

DATE 8/23/2018

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
75S	**89E**	**14**	**1**	**9902**	65.00	64	282	S	W

CL: 68.1 % COEFF **NET BF/ACRE** # OF PLOTS REQ. INF. POP.

SD: 1.0 VAR. S.E.% LOW AVG HIGH 5 10 15

CL: 68.1 % COEFF **NET BF/ACRE** # OF PLOTS REQ. INF. POP.

SD: 1.0

	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
RCDR OG	63.3	7.9	14,144	15,359	16,574			
W HMLK	166.4	20.8	2,354	2,971	3,589			
S SPRUCE	231.2	28.9	2,165	3,043	3,922			
Y CDR	457.9	57.2	103	242	380			
RD ALDER								
TOTAL	*65.2*	*8.1*	*19,854*	*21,615*	*23,376*	*170*	*42*	*19*

CL: 68.1 % COEFF **NET CUFT FT/ACRE** # OF PLOTS REQ. INF. POP.

SD: 1.0

	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
RCDR OG	65.6	8.2	4,599	5,009	5,420			
W HMLK	154.0	19.2	843	1,044	1,245			
S SPRUCE	227.0	28.4	483	674	865			
Y CDR	454.6	56.8	29	67	106			
RD ALDER								
TOTAL	*64.1*	*8.0*	*6,251*	*6,795*	*7,339*	*164*	*41*	*18*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: DOFVAL4

Page 1
Date 8/23/2018
Time 2:57:03PM

T75S R89E S12 T9903

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
75S	89E	12	345	9903	78.00	66	238	S	W

T75S R89E S12 T9903

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 6-11	12-17	18-23	24+	Log Length 12-23	24-31	32-36	37-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
WH		SH	1S		29.6	94	66	5				100		100			26	31	810	6.15	.1
WH		D	3S	10	2.0	1,389	1,361	106	87	6	7		1	29	24	46	35	8	81	0.77	16.7
WH		D	4S	15	3.4	2,253	2,176	170	95	5			11	26	25	38	31	7	50	0.56	43.8
WH		HI	2S	2	2.4	248	242	19			100			63	37		29	20	450	3.00	.5
WH		HI	PE	1	9.8	105	94	7				100			100		32	29	1100	5.44	.1
WH		J	2S	3		511	511	40		57	43			34	20	46	33	18	411	2.47	1.2
WH		K	2S	19	10.2	2,926	2,626	205		75	18	8		21	47	31	33	14	232	1.76	11.3
WH		K	3S	20	4.7	2,822	2,688	210		88	6	6	4	40	41	15	30	13	201	1.55	13.4
WH		RS	1S	4	11.2	708	629	49				100		29	32	39	33	26	913	5.08	.7
WH		RS	2S	15	12.2	2,304	2,022	158			87	13		28	62	10	32	21	517	3.28	3.9
WH		PU	3S		32.7	95	64	5			100			100			26	21	330	4.00	.2
WH		PU	U	11	18.7	1,777	1,445	113	32	24	33	11	49	16	14	21	23	10	85	1.14	17.1
WH	**Totals**			60	8.6	15,231	13,924	1,086	27	37	25	11	8	29	37	26	31	10	128	1.10	109.1
RC		SC	4S			23	23	2	100					100			31	6	40	0.71	.6
RC		L	3S	24	33.6	2,060	1,368	107			12	88	11	39	41	9	28	29	745	7.48	1.8
RC		M	3S	32	13.4	2,117	1,834	143		37	16	46		21	60	19	33	17	403	3.44	4.6
RC		M	2R	19	16.3	1,277	1,068	83			26	74		7	85	8	33	26	851	6.32	1.3
RC		RC	3S	22	30.1	1,772	1,238	97	14	22	32	32	15	44	31	10	29	15	225	2.92	5.5
RC		RC	4S	3	10.7	165	147	11	62	14		24	40	43		17	21	8	57	1.02	2.6
RC	**Totals**			24	23.4	7,414	5,678	443	5	17	20	57	7	29	52	12	29	17	348	3.57	16.3
SS		D	3S			21	21	2	100							100	38	9	110	1.54	.2
SS		D	4S	1		35	35	3	100				29			71	28	6	41	0.72	.9
SS		HI	1S	20	8.1	772	710	55				100			54	46	37	34	1788	8.48	.4
SS		HI	2S	7	8.2	273	250	20			49	51			100		33	25	820	4.70	.3
SS		HI	SL	4	12.3	147	129	10				100			100		33	38	1930	11.03	.1
SS		K	2S	19	.7	697	692	54		32		68			23	77	38	17	560	2.86	1.2
SS		K	3S	11	9.9	439	396	31		85	15			35	65		31	16	280	2.33	1.4
SS		RS	1S	15	4.4	552	527	41				100			70	30	35	30	1362	6.07	.4
SS		RS	2S	18	7.0	692	644	50			38	62		12	41	47	34	24	848	4.25	.8
SS		PU	U	5	35.1	258	168	13				100				100	40	30	1055	7.09	.2
SS	**Totals**			15	8.1	3,886	3,571	279	2	16	12	71	0	6	51	43	34	19	619	3.58	5.8
YC		YC	2S	29	23.7	78	60	5		100					100		33	17	290	2.93	.2
YC		YC	3S	62		128	128	10	100					8	56	36	36	7	68	0.69	1.9
YC		YC	4S	9		18	18	1	100				100				14	6	20	0.27	.9
YC	**Totals**			1	8.3	224	205	16	71	29			9	5	64	23	29	8	69	0.81	3.0
Type Totals					12.6	26,754	23,378	1,823	18	29	22	32	6	25	43	25	30	11	174	1.50	134.1

TC TSTATS

STATISTICS

PAGE 1

PROJECT DOFVAL4

DATE 8/23/2018

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
75S	**89E**	**12**	**345**	**9903**	78.00	66	238	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	66	238	3.6		
CRUISE	65	238	3.7	6,672	3.6
DBH COUNT					
REFOREST					
COUNT					
BLANKS	1				
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
W HMLK	147	70.6	18.1	53	29.6	125.6	15,231	13,924	3,672	3,671
RCDR OG	72	10.5	33.9	55	11.3	66.1	7,414	5,678	1,697	1,697
S SPRUCE	16	2.6	30.7	79	2.4	13.3	3,886	3,571	696	696
Y CDR	3	1.9	16.4	51	0.7	2.7	224	205	70	70
TOTAL	*238*	*85.5*	*21.1*	*54*	*45.2*	*207.7*	*26,754*	*23,378*	*6,136*	*6,135*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 % COEFF — **SAMPLE TREES - BF** — # OF TREES REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
W HMLK	113.2	9.3	371	409	447			
RCDR OG	110.2	13.0	813	934	1,055			
S SPRUCE	66.1	17.0	1,756	2,118	2,479			
Y CDR	90.9	62.9	62	167	271			
TOTAL	*130.0*	*8.4*	*623*	*680*	*737*	*675*	*169*	*75*

CL: 68.1 % COEFF — **SAMPLE TREES - CF** — # OF TREES REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
W HMLK	93.4	7.7	89	96	104			
RCDR OG	78.4	9.2	235	259	283			
S SPRUCE	58.9	15.2	339	399	460			
Y CDR	92.3	63.8	21	58	96			
TOTAL	*105.3*	*6.8*	*154*	*165*	*177*	*442*	*111*	*49*

CL: 68.1 % COEFF — **TREES/ACRE** — # OF PLOTS REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
W HMLK	87.6	10.8	63	71	78			
RCDR OG	158.9	19.5	8	11	13			
S SPRUCE	256.2	31.5	2	3	3			
Y CDR	578.4	71.1	1	2	3			
TOTAL	*72.7*	*8.9*	*78*	*86*	*93*	*211*	*53*	*23*

CL: 68.1 % COEFF — **BASAL AREA/ACRE** — # OF PLOTS REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
W HMLK	74.7	9.2	114	126	137			
RCDR OG	132.9	16.3	55	66	77			
S SPRUCE	203.4	25.0	10	13	17			
Y CDR	602.9	74.1	1	3	5			
TOTAL	*52.0*	*6.4*	*194*	*208*	*221*	*108*	*27*	*12*

CL: 68.1 % COEFF — **NET BF/ACRE** — # OF PLOTS REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
W HMLK	101.4	12.5	12,188	13,924	15,660			
RCDR OG	135.8	16.7	4,730	5,678	6,626			
S SPRUCE	228.8	28.1	2,566	3,571	4,576			
Y CDR	651.9	80.2	41	205	369			
TOTAL	*63.0*	*7.8*	*21,566*	*23,378*	*25,190*	*159*	*40*	*18*

STATISTICS

PROJECT DOFVAL4

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
75S	**89E**	**12**	**345**	**9903**	78.00	66	238	S	W

CL: 68.1 % COEFF **NET CUFT FT/ACRE** # OF PLOTS REQ. INF. POP.

SD: 1.0 VAR. S.E.% LOW AVG HIGH 5 10 15

CL: 68.1 % COEFF **NET CUFT FT/ACRE** # OF PLOTS REQ. INF. POP.

SD: 1.0 VAR.% S.E.% LOW AVG HIGH 5 10 15

W HMLK	87.5	10.8	3,276	3,671	4,066			
RCDR OG	138.3	17.0	1,408	1,697	1,986			
S SPRUCE	214.5	26.4	513	696	880			
Y CDR	625.0	76.9	16	70	125			
TOTAL	*56.8*	*7.0*	*5,706*	*6,135*	*6,563*	*129*	*32*	*14*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: DOFVAL4

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Date 8/23/2018
Time 3:01:56PM

T75S R89E S2 T9904

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
75S	89E	2	34	9904	45.00	41	211	S	W

T75S R89E S2 T9904

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 6-11	12-17	18-23	24+	Log Length 12-23	24-31	32-36	37-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
WH		SH	2S		33.1	215	144	6				100			100		36	31	1070	8.39	.1
WH		D	3S	7	9.8	2,470	2,228	100	81	6	7	6	4	14	31	51	36	9	94	0.94	23.7
WH		D	4S	6	1.4	1,655	1,631	73	100				12	35	23	30	30	7	54	0.60	30.2
WH		HI	1S	4	5.7	1,152	1,085	49				100		11	68	21	34	27	1112	5.39	1.0
WH		HI	2S	1		347	347	16			100				100		32	21	621	3.26	.6
WH		HI	S		6.3	158	148	7			100				100		36	20	590	2.80	.3
WH		HI	PE	2	4.2	382	366	16				100			100		34	28	1191	5.12	.3
WH		J	2S	2	17.1	765	634	29		84	16				84	16	35	17	360	2.42	1.8
WH		J	S		4.3	178	170	8		100						100	40	17	440	2.49	.4
WH		K	2S	27	8.1	8,805	8,093	364		68	20	12	1	12	50	37	34	15	288	1.99	28.1
WH		K	3S	10	8.6	3,004	2,746	124		89	11		3	26	47	23	31	13	189	1.62	14.5
WH		RS	1S	2	11.4	906	803	36				100		33	17	50	32	28	1025	5.94	.8
WH		RS	2S	19	13.2	6,491	5,635	254			72	28		19	59	22	33	21	532	3.41	10.6
WH		PU	U	20	11.0	6,389	5,685	256	33	23	16	27	34	24	16	25	27	10	106	1.03	53.6
WH	**Totals**			52	9.7	32,917	29,716	1,337	18	34	26	22	8	18	44	30	31	11	179	1.43	165.8
SS		SH	1S	2	35.1	1,199	778	35				100	25	50		26	30	42	1520	10.39	.5
SS		SH	SL	3	49.9	1,172	587	26				100	13		18	69	35	60	2928	23.44	.2
SS		D	3S			202	202	9	12	61		27	8	12	23	57	31	13	229	2.43	.9
SS		HI	1S	16	5.7	4,464	4,208	189				100		21	49	30	33	35	1916	8.73	2.2
SS		HI	2S	1	17.3	403	333	15			100			50	50		31	22	550	3.06	.6
SS		HI	S	2	2.8	522	507	23				100			46	54	37	27	1216	4.70	.4
SS		HI	SL	20	5.6	5,796	5,472	246				100		40	41	19	31	38	2033	9.52	2.7
SS		J	2S			167	167	8			24	76	24	76			24	23	629	4.35	.3
SS		K	2S	16	4.7	4,392	4,185	188		9	13	78	5	9	52	34	32	23	838	4.82	5.0
SS		K	3S	3	.1	774	773	35		38	39	23	15	26	51	8	27	16	338	3.34	2.3
SS		RS	1S	14	3.6	4,032	3,888	175				100		13	68	19	33	35	1958	8.28	2.0
SS		RS	2S	19	5.7	5,529	5,215	235			12	88		23	37	40	33	29	1324	5.68	3.9
SS		PU	3S			22	22	1			100		100				17	19	250	4.14	.1
SS		PU	U	4	25.6	1,251	930	42			6	94	31	21	48		27	35	1093	8.36	.9
SS	**Totals**			48	8.9	29,925	27,269	1,227	0	3	7	90	3	23	46	28	31	28	1244	6.44	21.9
RC		SC	3S	39		67	67	3	100							100	37	9	110	1.21	.6
RC		RC	3S	61	25.0	138	104	5				100				100	40	30	1230	8.22	.1
RC	**Totals**			0	16.9	205	170	8	39			61				100	37	12	247	2.12	.7
Type Totals					9.3	63,047	57,155	2,572	10	19	17	55	6	20	45	29	31	13	303	2.03	188.4

TC TSTATS

STATISTICS

PAGE 1

PROJECT DOFVAL4

DATE 8/23/2018

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
75S	**89E**	**2**	**34**	**9904**	45.00	41	211	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	41	211	5.1		
CRUISE	41	211	5.1	4,381	4.8
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
W HMLK	155	89.9	20.8	63	46.5	212.0	32,917	29,716	7,283	7,281
S SPRUCE	54	6.8	42.3	108	10.2	66.1	29,925	27,269	4,439	4,440
RCDR OG	2	.7	25.2	45	0.5	2.4	205	170	55	55
TOTAL	*211*	*97.3*	*23.0*	*66*	*58.5*	*280.5*	*63,047*	*57,155*	*11,777*	*11,775*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 % COEFF — **SAMPLE TREES - BF** — # OF TREES REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
W HMLK	109.2	8.8	621	681	741			
S SPRUCE	68.6	9.3	4,992	5,505	6,018			
RCDR OG	118.2	110.7		670	1,412			
TOTAL	*151.8*	*10.4*	*1,715*	*1,915*	*2,115*	*920*	*230*	*102*

CL: 68.1 % COEFF — **SAMPLE TREES - CF** — # OF TREES REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
W HMLK	88.5	7.1	140	151	162			
S SPRUCE	69.5	9.4	822	908	994			
RCDR OG	107.7	100.8		187	375			
TOTAL	*136.9*	*9.4*	*313*	*345*	*378*	*748*	*187*	*83*

CL: 68.1 % COEFF — **TREES/ACRE** — # OF PLOTS REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
W HMLK	74.9	11.7	79	90	100			
S SPRUCE	128.3	20.0	5	7	8			
RCDR OG	640.3	99.9	0	1	1			
TOTAL	*69.6*	*10.9*	*87*	*97*	*108*	*194*	*48*	*22*

CL: 68.1 % COEFF — **BASAL AREA/ACRE** — # OF PLOTS REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
W HMLK	46.9	7.3	197	212	228			
S SPRUCE	116.5	18.2	54	66	78			
RCDR OG	640.3	99.9	0	2	5			
TOTAL	*39.4*	*6.2*	*263*	*281*	*298*	*62*	*16*	*7*

CL: 68.1 % COEFF — **NET BF/ACRE** — # OF PLOTS REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
W HMLK	53.9	8.4	27,215	29,716	32,217			
S SPRUCE	118.0	18.4	22,250	27,269	32,288			
RCDR OG	640.3	99.9	0	170	340			
TOTAL	*56.3*	*8.8*	*52,136*	*57,155*	*62,174*	*126*	*32*	*14*

CL: 68.1 % COEFF — **NET CUFT FT/ACRE** — # OF PLOTS REQ. — INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
W HMLK	50.4	7.9	6,708	7,281	7,854			
S SPRUCE	116.6	18.2	3,632	4,440	5,247			
RCDR OG	640.3	99.9	0	55	109			

STATISTICS

PROJECT **DOFVAL4**

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
75S	**89E**	**2**	**34**	**9904**	45.00	41	211	S	W

CL: 68.1 %
SD: 1.0

	COEFF VAR.	S.E.%	NET CUFT FT/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
TOTAL	*46.8*	*7.3*	*10,916*	*11,775*	*12,635*	*87*	*22*	*10*

TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

T75S R89E S13 Ty200C 50.00
T75S R89E S13 Ty200S 152.00

Project: VAL_U2LT
Acres 202.00

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Date 8/15/2018
Time 2:49:33PM

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 6-7	8-12	13-19	20+	Log Length 12-23	24-31	32-36	37-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
HM	G	2S		5	4.1	455	436	88		100				46	45	9	30	12	144	1.31	3.0
HM	G	3S		32	3.7	2,723	2,620	529		100				8	68	24	35	9	94	0.88	27.8
HM	G	4S				14	14	3		100				100			24	8	40	0.71	.3
HM	CS	3S		25	.3	2,007	2,002	404	100						100		36	6	60	0.51	33.5
HM	ST	2S		23	6.9	2,057	1,915	387			100			24	72	5	31	14	230	1.93	8.3
HM	PU	3S		1		38	38	8	100						100		32	6	50	0.37	.8
HM	PU	4S		11	.1	896	894	181	100				52	42	7		21	6	26	0.36	33.9
HM	PU	U		3		244	244	49	88	12			61	39			20	6	28	0.45	8.8
HM Totals				22	3.2	8,433	8,163	1,649	39	38	23		7	17	67	9	30	8	70	0.71	116.5
RA	RA	2S		10	7.4	196	181	37		28	72			43	48	9	30	13	183	1.65	1.0
RA	RA	3S		90	4.0	1,586	1,523	308		100				26	52	22	32	8	76	0.92	20.0
RA	PU	CU															24	7		0.00	.5
RA Totals				5	4.4	1,781	1,704	344		92	8			28	52	20	32	9	79	0.93	21.6
S	G	2S		4	.6	1,139	1,133	229		100				7	80	12	34	12	168	1.29	6.8
S	G	3S		19		4,860	4,860	982		100				11	63	26	35	9	110	0.91	44.1
S	CS	3S		10		2,728	2,728	551	100						100		36	6	60	0.55	45.5
S	ST	2S		49	.1	12,514	12,498	2,525			100	0		9	62	29	35	15	321	2.01	38.9
S	PU	4S		2		542	542	110	100				83	17			17	6	21	0.37	25.8
S	PU	U				79	79	16	100				66	34			19	6	21	0.30	3.7
S	O	2S		16		3,998	3,998	808				100		5	73	23	36	22	736	3.99	5.4
S Totals				69	.1	25,860	25,838	5,219	13	23	48	16	2	8	67	23	32	10	152	1.15	170.3
WH	SH	1S		10	16.8	188	156	32				100			20	80	39	25	965	6.43	.2
WH	D	3S		2		17	17	3	59	41				23	36	41	34	7	70	1.62	.2
WH	D	4S		2	8.7	33	30	6	55	45			25	67	7		22	7	33	0.87	.9
WH	K	2S		25	5.0	378	359	73		3	92	5		1	83	16	35	15	295	2.38	1.2
WH	K	3S		2		36	36	7		40	60				100		33	14	254	1.81	.1
WH	RS	2S		57	8.4	890	815	165			3	97			57	43	37	24	895	5.61	.9
WH	PU	4S				5	5	1	100				100				14	6	19	0.56	.3
WH	PU	U		2		17	17	3	100							100	38	6	60	1.54	.3
WH Totals				4	8.2	1,564	1,435	290	3	3	26	67	1	2	58	39	32	14	349	3.00	4.1
SS	SH	1S		18	3.7	78	75	15				100				100	40	54	5260	22.09	.0
SS	D	3S		5	40.3	39	23	5		9		91		91	9		28	27	660	7.38	.0
SS	K	2S		2	15.6	10	9	2			100			22	78		29	15	197	3.15	.0
SS	RS	2S		74	3.6	319	307	62				100			18	82	38	32	1913	8.67	.2
SS	PU	4S		1		0	0	0	100				100				21	7	30	1.22	.0
SS Totals				1	7.1	446	415	84	0	1	2	97	0	6	16	79	34	28	1556	8.38	.3
Totals					1.4	38,085	37,555	7,586	17	29	40	14	3	10	66	21	31	9	120	1.01	312.7

PROJECT STATISTICS

PROJECT VAL U2LT

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
75S	89E	13	2	200C	202.00	162	912	S	W
75S	89E	13	2	200S					

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	162	912	5.6		
CRUISE	162	912	5.6	38,074	2.4
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
SPRC SG	537	86.4	18.8	68	38.4	166.7	25,860	25,838	6,281	6,281
HMLK SG	253	79.6	14.2	49	23.3	87.6	8,433	8,163	2,433	2,433
RD ALDER	89	20.6	15.9	40	7.1	28.3	1,781	1,704	637	637
W HMLK	29	1.8	32.4	79	1.8	10.0	1,564	1,435	392	392
S SPRUCE	4	.1	52.0	130	0.2	1.1	446	415	77	77
TOTAL	*912*	*188.5*	*16.9*	*57*	*71.5*	*293.8*	*38,085*	*37,555*	*9,820*	*9,820*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL 68.1 SD: 1.0

	COEFF VAR.%	S.E.%	SAMPLE TREES - BF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
SPRC SG	72.6	3.1	452	466	481			
HMLK SG	82.4	5.2	148	156	164			
RD ALDER	60.3	6.4	89	95	101			
W HMLK	60.0	11.3	996	1,123	1,251			
S SPRUCE	79.7	45.5	3,466	6,360	9,254			
TOTAL	*156.0*	*5.2*	*371*	*391*	*411*	*971*	*243*	*108*

CL 68.1 SD: 1.0

	COEFF VAR.%	S.E.%	SAMPLE TREES - CF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
SPRC SG	65.0	2.8	107	110	113			
HMLK SG	81.2	5.1	44	47	49			
RD ALDER	53.1	5.6	34	36	38			
W HMLK	48.3	9.1	266	293	319			
S SPRUCE	59.3	33.9	786	1,188	1,591			
TOTAL	*120.4*	*4.0*	*92*	*96*	*100*	*578*	*145*	*64*

CL 68.1 SD: 1.0

	COEFF VAR.%	S.E.%	TREES/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
SPRC SG	92.5	7.3	80	86	93			
HMLK SG	112.1	8.8	73	80	87			
RD ALDER	191.6	15.0	18	21	24			
W HMLK	390.1	30.6	1	2	2			
S SPRUCE	667.3	52.4	0	0	0			
TOTAL	*57.2*	*4.5*	*180*	*188*	*197*	*131*	*33*	*15*

CL 68.1 SD: 1.0

	COEFF VAR.%	S.E.%	BASAL AREA/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
SPRC SG	68.9	5.4	158	167	176			
HMLK SG	107.2	8.4	80	88	95			
RD ALDER	178.8	14.0	24	28	32			
W HMLK	351.4	27.6	7	10	13			
S SPRUCE	641.7	50.4	1	1	2			
TOTAL	*35.8*	*2.8*	*286*	*294*	*302*	*51*	*13*	*6*

PROJECT STATISTICS

PROJECT **VAL U2LT**

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
75S	89E	13	2	200C	202.00	162	912	S	W
75S	89E	13	2	200S					

CL 68.1 COEFF **NET BF/ACRE** # OF PLOTS REQ. INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
SPRC SG	70.5	5.5	24,408	25,838	27,268			
HMLK SG	115.3	9.1	7,424	8,163	8,902			
RD ALDER	206.3	16.2	1,428	1,704	1,980			
W HMLK	367.2	28.8	1,022	1,435	1,849			
S SPRUCE	725.8	57.0	178	415	651			
TOTAL	*44.1*	*3.5*	*36,255*	*37,555*	*38,855*	*78*	*19*	*9*

CL 68.1 COEFF **NET CUFT FT/ACRE** # OF PLOTS REQ. INF. POP.

SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
SPRC SG	69.9	5.5	5,936	6,281	6,625			
HMLK SG	113.7	8.9	2,216	2,433	2,650			
RD ALDER	185.4	14.6	544	637	730			
W HMLK	359.6	28.2	282	392	503			
S SPRUCE	673.9	52.9	36	77	118			
TOTAL	*39.8*	*3.1*	*9,513*	*9,820*	*10,127*	*63*	*16*	*7*

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: USFSVAL9

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Time 12:03:38PM

T75S R90E S19 T9999

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
75S	90E	19	1	9999	73.00	72	396	S	W

T75S R90E S19 T9999

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 6-7	8-12	13-19	20+	Log Length 12-23	24-31	32-36	37-99	Average Log Ln Ft	Dia In	Bd Ft	CF/ Lf	Logs Per /Acre
S		G	2S	7		2,387	2,387	174		100				26	60	14	33	12	163	1.27	14.6
S		G	3S	22		6,653	6,653	486		100				14	59	26	34	9	103	0.84	64.9
S		CS	3S	13	.3	4,226	4,212	307	100						100		36	6	60	0.50	70.4
S		ST	2S	50	.5	15,639	15,560	1,136			100			20	59	22	33	15	286	1.85	54.4
S		PU	3S	1		48	48	3	100						100		35	6	50	0.37	1.0
S		PU	4S	1		471	471	34	100				69	31			19	6	24	0.39	19.5
S		PU	U			22	22	2	100				100				15	6	17	0.28	1.3
S		O	2S	6		1,663	1,663	121				100			66	34	36	21	738	3.65	2.3
S Totals				80	.3	31,109	31,016	2,264	15	29	50	5	1	16	64	19	33	10	136	1.00	228.3
HM		G	2S	3		201	201	15		100				29	71		29	12	146	1.27	1.4
HM		G	3S	58	.8	3,776	3,744	273		100				13	56	31	35	9	93	0.75	40.1
HM		CS	3S	21		1,386	1,386	101	100						100		36	6	60	0.45	23.1
HM		ST	2S	2		140	140	10			100			48	52		30	14	215	1.78	.7
HM		PU	3S	2	11.4	159	141	10	28		72		36	35	28		26	10	87	0.86	1.6
HM		PU	4S	12	1.8	790	775	57	100				38	62			23	6	28	0.37	28.0
HM		PU	U	2		78	78	6	100				53	47			21	6	24	0.28	3.3
HM Totals				17	1.0	6,531	6,466	472	35	61	4		6	18	58	18	31	7	66	0.59	98.1
RA		RA	3S	100	2.8	1,396	1,357	99		100				49	37	14	30	8	69	0.75	19.7
RA Totals				3	2.8	1,396	1,357	99		100				49	37	14	30	8	69	0.75	19.7
Type Totals					.5	39,036	38,839	2,835	18	37	41	4	2	17	62	19	32	9	112	0.87	346.0

TC PSTATS

PROJECT STATISTICS

PROJECT USFSVAL9

DATE 8/15/2018

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
75S	90E	19	1	9999	73.00	72	396	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	72	396	5.5		
CRUISE	72	396	5.5	15,774	2.5
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
SPRC SG	278	122.4	17.6	67	49.3	206.7	31,109	31,016	7,504	7,504
HMLK SG	90	73.5	13.2	50	19.3	70.1	6,531	6,466	1,797	1,797
RD ALDER	28	20.1	14.1	36	5.8	21.9	1,396	1,357	441	441
TOTAL	*396*	*216.1*	*15.9*	*58*	*74.9*	*298.6*	*39,036*	*38,839*	*9,741*	*9,742*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL 68.1 SD: 1.0

SAMPLE TREES - BF

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
SPRC SG	64.8	3.9	340	354	368			
HMLK SG	53.1	5.6	99	105	111			
RD ALDER	43.2	8.3	66	73	79			
TOTAL	*81.8*	*4.1*	*266*	*278*	*289*	*267*	*67*	*30*

CL 68.1 SD: 1.0

SAMPLE TREES - CF

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
SPRC SG	56.9	3.4	81	83	86			
HMLK SG	50.5	5.3	28	29	31			
RD ALDER	40.0	7.7	22	24	26			
TOTAL	*71.4*	*3.6*	*64*	*67*	*69*	*204*	*51*	*23*

CL 68.1 SD: 1.0

TREES/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
SPRC SG	64.0	7.5	113	122	132			
HMLK SG	137.6	16.2	62	74	85			
RD ALDER	196.6	23.2	15	20	25			
TOTAL	*49.0*	*5.8*	*204*	*216*	*229*	*96*	*24*	*11*

CL 68.1 SD: 1.0

BASAL AREA/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
SPRC SG	58.5	6.9	192	207	221			
HMLK SG	128.4	15.1	59	70	81			
RD ALDER	194.9	23.0	17	22	27			
TOTAL	*39.0*	*4.6*	*285*	*299*	*312*	*61*	*15*	*7*

CL 68.1 SD: 1.0

NET BF/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
SPRC SG	60.3	7.1	28,814	31,016	33,218			
HMLK SG	135.0	15.9	5,438	6,466	7,494			
RD ALDER	221.6	26.1	1,003	1,357	1,711			
TOTAL	*45.8*	*5.4*	*36,743*	*38,839*	*40,935*	*84*	*21*	*9*

CL 68.1 SD: 1.0

NET CUFT FT/ACRE

	COEFF VAR.%	S.E.%	LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
SPRC SG	60.7	7.1	6,967	7,504	8,040			
HMLK SG	130.0	15.3	1,522	1,797	2,073			

PROJECT STATISTICS

PROJECT **USFSVAL9**

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
75S	90E	19	1	9999	73.00	72	396	S	W

CL 68.1
SD: 1.00

	COEFF VAR.	S.E.%	NET CUFT FT/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
RD ALDER	209.0	24.6	332	441	549			
TOTAL	*43.9*	*5.2*	*9,238*	*9,742*	*10,245*	*77*	*19*	*9*