



This was once leading edge technology

EVOLUTION OF A REVOLUTION

THE EARLY DEVELOPMENT OF STEEP SLOPE WINCH ASSIST IN THE NORTHWEST

January 14 ,2016

Western Region Council of Forest Engineers

Valley River Inn, Eugene Oregon

Bruce Skurdahl

Summit Attachment & Machinery LLC

WHO IS SUMMIT ATTACHMENT & MACHINERY?

- PARTNERSHIP BETWEEN ERIC KRUME & BRUCE SKURDAHL
- STARTED WITH AN IDEA TO DEVELOP A NEW STYLE TONG THROWER THAT IS AN ATTACHMENT INSTEAD OF AN INTEGRATED PART OF A MACHINE. THE FIRST ONE WORKED SO WELL WE STARTED SUMMIT TO BUILD THEM.
- SOON BEGAN BUILDING NEW & IMPROVED SHOVEL YARDERS
- DEVELOPED A RANGE OF EXTREME DUTY LOGGING GRAPPLES
- LED TO INTEREST IN STEEP SLOPE WINCH ASSIST

BRUCE SKURDAHL

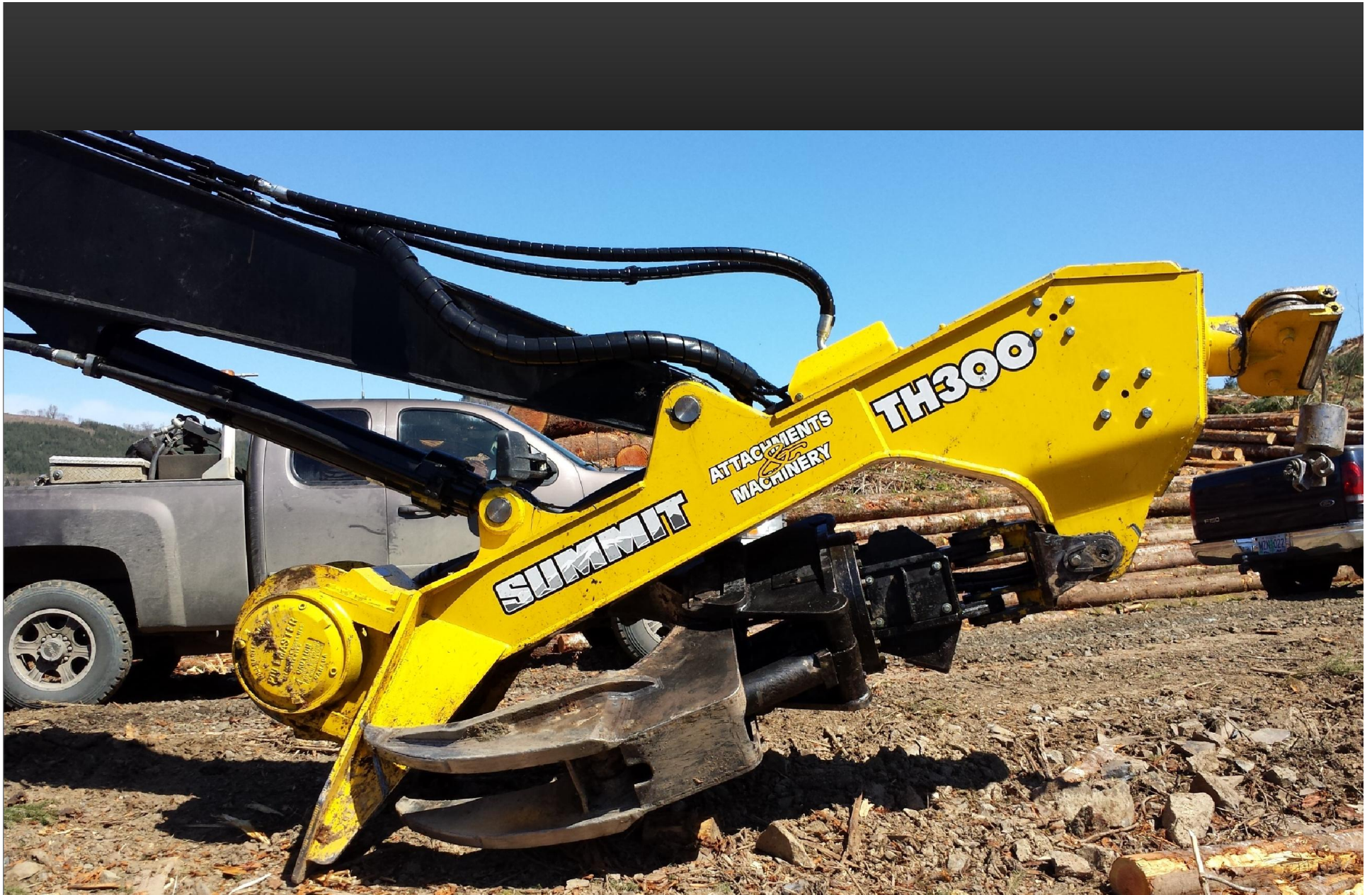
- GRADUATED FROM OSU IN 1981 AND ENTERED THE INDUSTRIAL WINCH BUSINESS
- INVOLVED IN ALL ASPECTS OF THE INDUSTRIAL WINCH BUSINESS BUT SOON GRAVITATED TO THE LOGGING INDUSTRY
- HELPED FOUND AND BUILD A WINCH COMPANY FOR NEARLY 15 YEARS, THEN SALES MANAGER FOR A MAJOR EXCAVATOR CONVERSION COMPANY FOR +/- 10 YEARS
- INVOLVED IN MOST OF THE WINCHES INSTALLED ON EXCAVATORS AND LOG LOADERS OVER THE LAST 35 YEARS
- HELPED DEVELOP TONG THROWERS, SHOVEL YARDERS, TIMBERMAST'R YARDERS, AND A VARIETY OF OTHER LOGGING WINCH SYSTEMS
- LIVES NEAR SHERWOOD, OREGON AND OPERATES THE FAMILY HAZELNUT FARM
- MARRIED FOR OVER 30 YEARS TO DAWN. FATHER OF FOUR SONS, OLDEST IS A PILOT IN THE US AIR FORCE, 2 STUDYING ENGINEERING @ OSU, AND THE YOUNGEST IS A JUNIOR IN HIGH SCHOOL

ERIC KRUME

- GREW UP IN FORKS, WASHINGTON
- STARTED LOGGING AT AGE 17 IN BIG WOOD ON BIG YARDERS
- STARTED KRUME LOGGING IN 1995
- OPERATES KRUME LOGGING OUT OF CASTLE ROCK, WASHINGTON
- MARRIED TO KIM FOR OVER 22 YEARS. FATHER OF 3, DAUGHTER THAT OWNS HER OWN HAIR SALON, SON THAT SPENT 7 YEARS IN THE AIR FORCE AND IS NOW STUDYING ENGINEERING @ WSU, & YOUNGEST SON WORKING FOR KRUME LOGGING
- DRIVEN TO INNOVATE, AS MANY OF THE TOOLS HE NEEDS ARE JUST NOT AVAILABLE IN THE MARKETPLACE

SUMMIT TH300 TONG THROWING HEEL
RACK MOUNTED ON A LINK BELT LX290TL





TONG THROWING HEEL RACK MOUNTED ON A CAT 300D LOG LOADER



FIRST SUMMIT
SHOVEL YARDER
STILL WORKING
EVERY DAY NEAR
TILLAMOOK,
OREGON



SAME CUSTOMER JUST TOOK DELIVERY
OF A NEW CAT 568LL SHOVEL YARDER

SAME CUSTOMER ALSO OWNS
A SUMMIT TONG THROWER



LINK BELT 370LXTL
SHOVEL YARDER
w/HAYWIRE &
TIEBACK DRUM

HITACHI ZX370LL
WITH 2 DRUM
OVER/UNDER
YARDING SYSTEM



WHAT IS STEEP SLOPE WINCH ASSIST?

STEEP SLOPE WINCH ASSIST
MATES A WINCH SYSTEM
WITH A LEVELING HARVESTER
TO MORE SAFELY AND
EFFICIENTLY HARVEST
TIMBER, COMPARED
TO TRADITIONAL HAND FALLING





MECHANIZED FALLING WITH WINCH ASSIST VS. HAND FALLING

WHY USE STEEP SLOPE WINCH ASSIST?

INCREASED SAFETY WHILE CUTTING

- REPLACE 4+ HAND FALLERS w/ONE MAN BELTED INTO A LOGGER-SAFE CAB
 - 4 x \$20-\$30/HOUR L & I HAND FALLERS VS. 1 x \$2-\$3/HOUR L & I MACHINE OPERATOR...JUST A WAY TO MEASURE RISK
- REDUCE HAZARDOUS SITUATIONS FOR HAND FALLERS
- REDUCE POTENTIAL FOR INJURY FOR CREW MEMBERS (FRIENDS & FAMILY)
- REDUCE POTENTIAL LIABILITY FOR LAWSUITS FOR LOGGER & TIMBERLAND OWNER



TYPICAL HAZARDOUS SITUATION FOR HAND FALLERS

**INCREASE CUTTER SAFETY
AND REDUCE POTENTIAL
LIABILITY FOR LOGGER &
TIMBERLAND OWNER**





STEEP SLOPE WINCH ASSIST ON VERY SLIPPERY
CLAY SOIL ON SW COAST OF WASHINGTON

WHY USE STEEP SLOPE WINCH ASSIST?

INCREASE PRODUCTIVITY WHILE CUTTING

- CUT & PILE...READY TO YARD...USE HARVEST MAP TO GUIDE
- REDUCE JACK STRAWING & BROKEN WOOD
- MAKES MACHINES MORE PRODUCTIVE EVEN ON MODERATE SLOPES
- NO CHURNING OR SPIN-OUT OF TRACKS
- NO 'STUCK-TIME'
- REDUCES OPERATOR STRESS & FATIGUE, KEEPING THEM SAFE & PRODUCTIVE

**MAKES MECHANIZED CUTTING MORE EFFICIENT
EVEN ON MODERATE SLOPES**



ENTIRE HILLSIDE SKIDDED DOWNHILL
WITH TIGERCAT 635, SAVING COST OF
BUILDING ROAD TO TOP & EXTRA COST
OF CABLE YARDING



WE WILL BE TESTING STEEP SLOPE WINCH
ASSIST TOGETHER WITH TIGERCAT 635
SKIDDER VERY SOON



WOOD MOVED TO ROADSIDE
READY TO PROCESS & LOAD



**SLOPE IS LESS IMPORTANT THAN
SOIL TYPE & GROUND CONDITION**

CUT & PILED...READY TO YARD



NO CHURNING OR SPIN-OUT





STEEP SLOPE WINCH ASSIST
REDUCES OPERATOR STRESS
& FATIGUE, KEEPING THEM
SAFE & PRODUCTIVE

REDUCE JACKSTRAWING
& BROKEN WOOD





ALL THE BENEFITS OF
MECHANIZED FALLING,
EXTENDED ONTO
STEEPER SLOPES

WHY USE STEEP SLOPE WINCH ASSIST?

INCREASED SAFETY WHILE YARDING

- LOGS ARE PILED NEAR SKYLINE FOR REDUCED SIDE-PULLING
- YARDING FROM PILES GIVES CHOKERMEN A CLEAR PATH TO THE SAFE ZONE
- REDUCED UPENDING & BREAKAGE
- REDUCED EFFORT/TURN...LOWER FATIGUE...LESS INJURY
- POTENTIAL TO USE WITH GRAPPLE YARDERS FURTHER REDUCING RISK



LOGS ARE PILED
NEAR SKYLINE TO
REDUCE SIDE-PULLING

YARDING FROM
PILES GIVES
CHOKERMEN A
CLEAR PATH TO
SAFE ZONE

REDUCED UPENDING &
BREAKAGE, AND RESULTING
DANGER TO CHOKERMEN

WHY USE STEEP SLOPE WINCH ASSIST?

INCREASED PRODUCTION

- YARDING FROM PILES REDUCES TIME WASTING SIDE PULLING
- YARDING FROM PILES REDUCES TIME WASTED SETTING CHOKERS
- YARDING FROM PILES REDUCES UPENDING & BREAKAGE
- YARDING FROM PILES REDUCES LOAD ON YARDING SYSTEM
- YARDING FROM PILES INCREASES PRODUCTIVITY

HANDCUT CONVENTIONAL TOWER

\$ 65.00 per Load to cut. 7 loads per day with Tower.

$\$ 65.00 \times 7 = \$ 455.00$ to cut

7 Loads for tower = \$4,795.00 after cutting

MECHANIZED CUTTING / CABLE ASSIST

33% Increase in Production

\$ 200.00 per Load to cut...11 Loads per day

$\$ 200.00 \times 11 = \$ 2,200.00$ to cut

11 Loads for tower = \$ 6,050.00 per day

FIRST SUMMIT STEEP SLOPE WINCH ASSIST SYSTEM:

- COMBINATION TETHER ASSIST
 - 1,350' x 1"
 - WIRELESS REMOTE CONTROL
 - WIRELESS VIDEO OF LANDING
- HYDRAULIC YARDER
 - 50' SKYLINE SHEAVE HEIGHT
 - HL25 2 SPEED SKIDDING DRUM
 - HAYWIRE DRUM



WINCH ASSIST MACHINE
SITS ROCK SOLID. GROUND
LEAD IMPROVES TRACTION
FOR HARVESTER



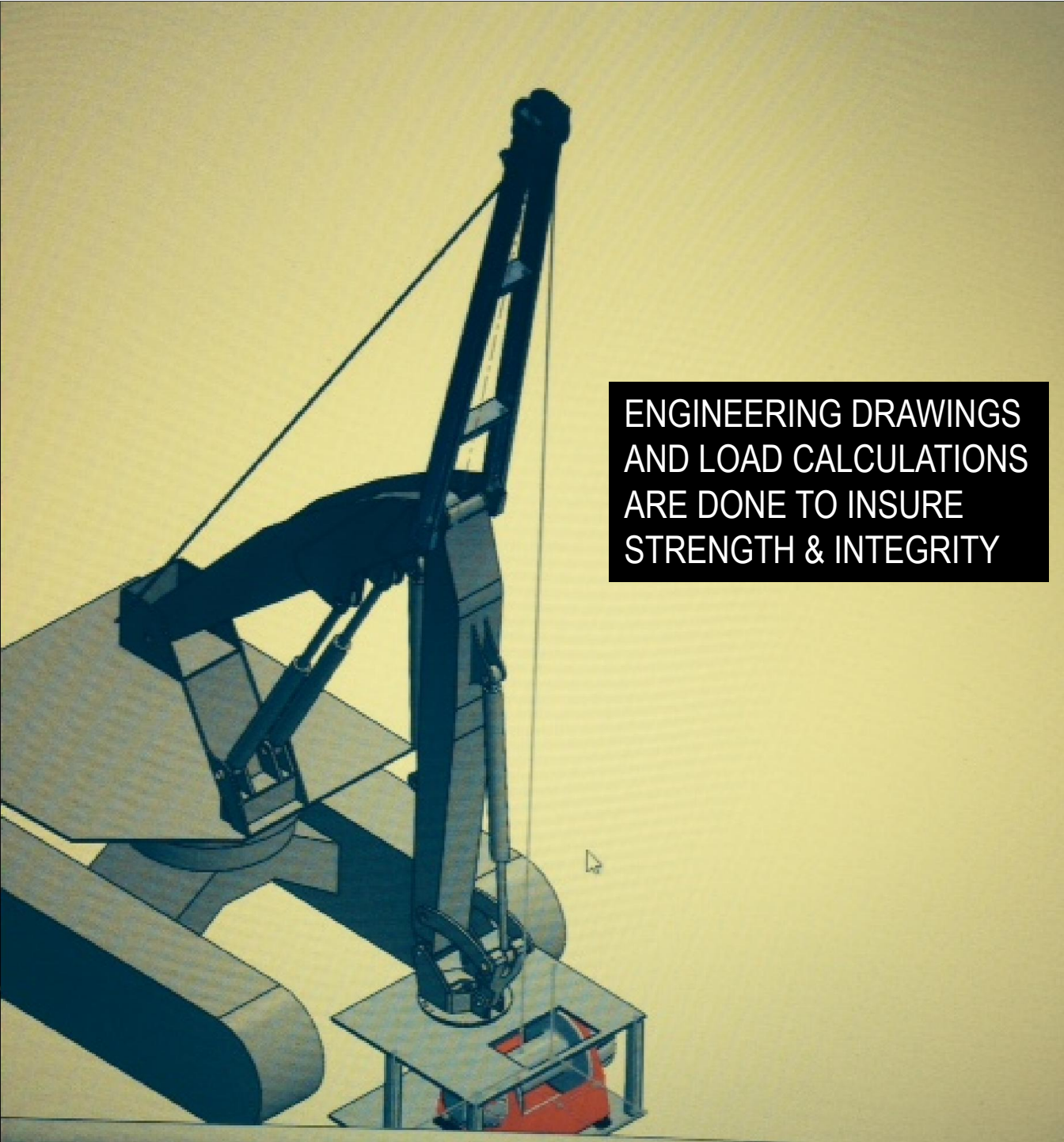
HITACHI ZX350LL STEEP SLOPE
WINCH ASSIST MACHINE



OWNER OF THIS MACHINE HAS HIS SECOND MACHINE IN OUR SHOP NOW

MODIFIED COUNTERWEIGHT
TO HANDLE WINCH LOADS





ENGINEERING DRAWINGS
AND LOAD CALCULATIONS
ARE DONE TO INSURE
STRENGTH & INTEGRITY

PIVOTING GANTRY
GIVES ADEQUATE
FLEET DISTANCE FOR
GOOD CABLE SPOOLING

OWNER OF THIS MACHINE
HAS HIS SECOND SUMMIT
WINCH ASSIST MACHINE READY
TO GO TO THE WOODS NOW

WINCH AND FAIRLEAD
ATTACHED TO
HOTSAW MOUNTING
PLATE



USED FELLER BUNCHER
OFFERS EXCELLENT
PLATFORM FOR WINCH
ASSIST





LOAD CELL SHEAVE PIN INTEGRATES INTO WINCH CONTROL TO PREVENT OVERLOAD

USED EXCAVATOR GIVES LOGGER COST EFFECTIVE & MULTI-USE MACHINE



LANTEC WINCH HOLDS
1,850' x 1" WIRE ROPE
ALLOWING FOR LARGER
CUTTING JOBS. AUTOMATIC
BRAKE & MASSIVE GEARS
DELIVER LONG SERVICE LIFE.

Summit
Attachments
&
Machinery



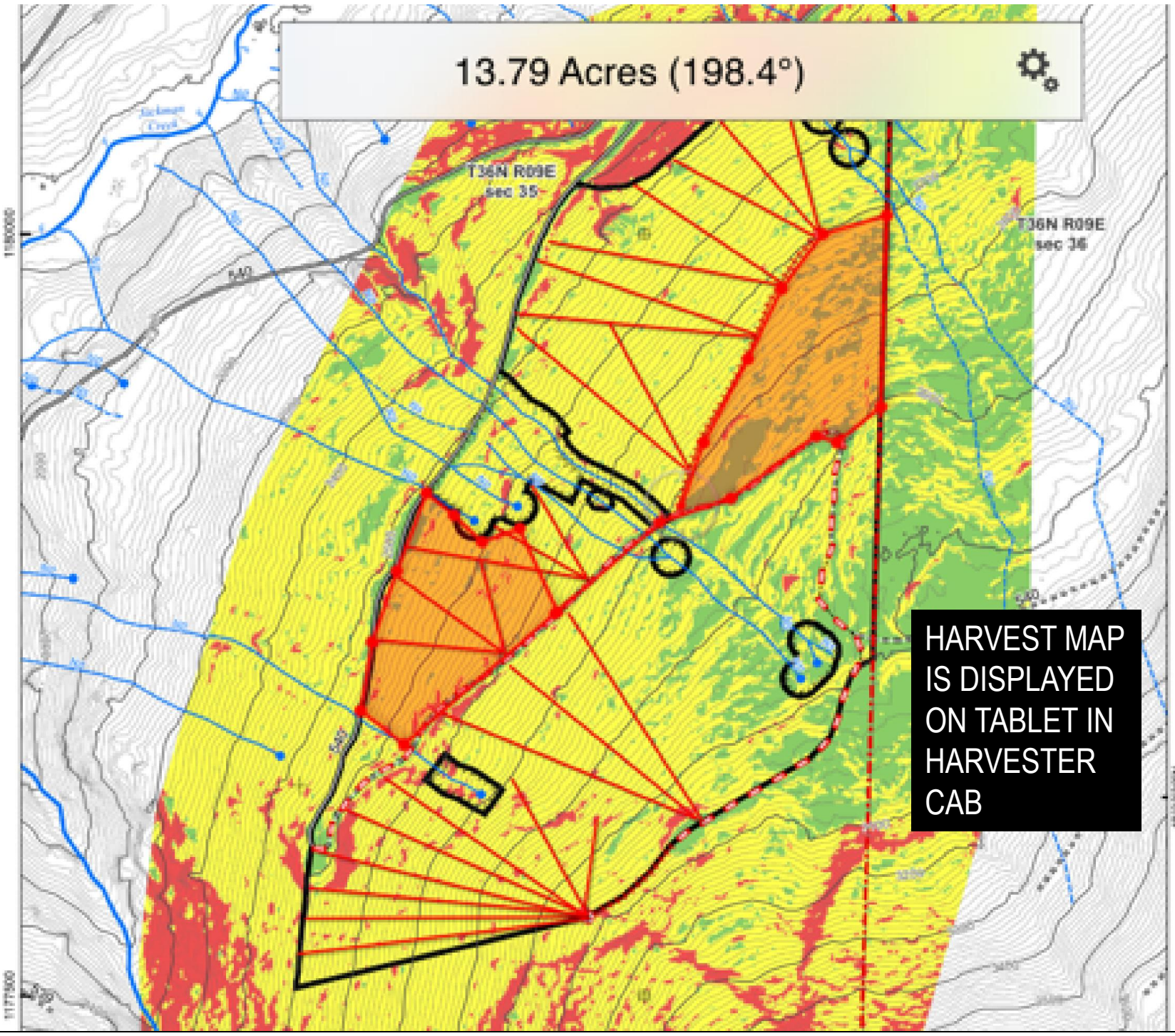
WINCH-TO-LEAD SHEAVE DISTANCE
INSURES EXCELLENT CABLE SPOOLING

WINCH LOCATION & STUB BOOM
ALLOW EASY TRANSPORT



CUTTING MACHINE HAS LIVE VIDEO SHOWING WINCH OPERATION & LOAD CELL READOUT

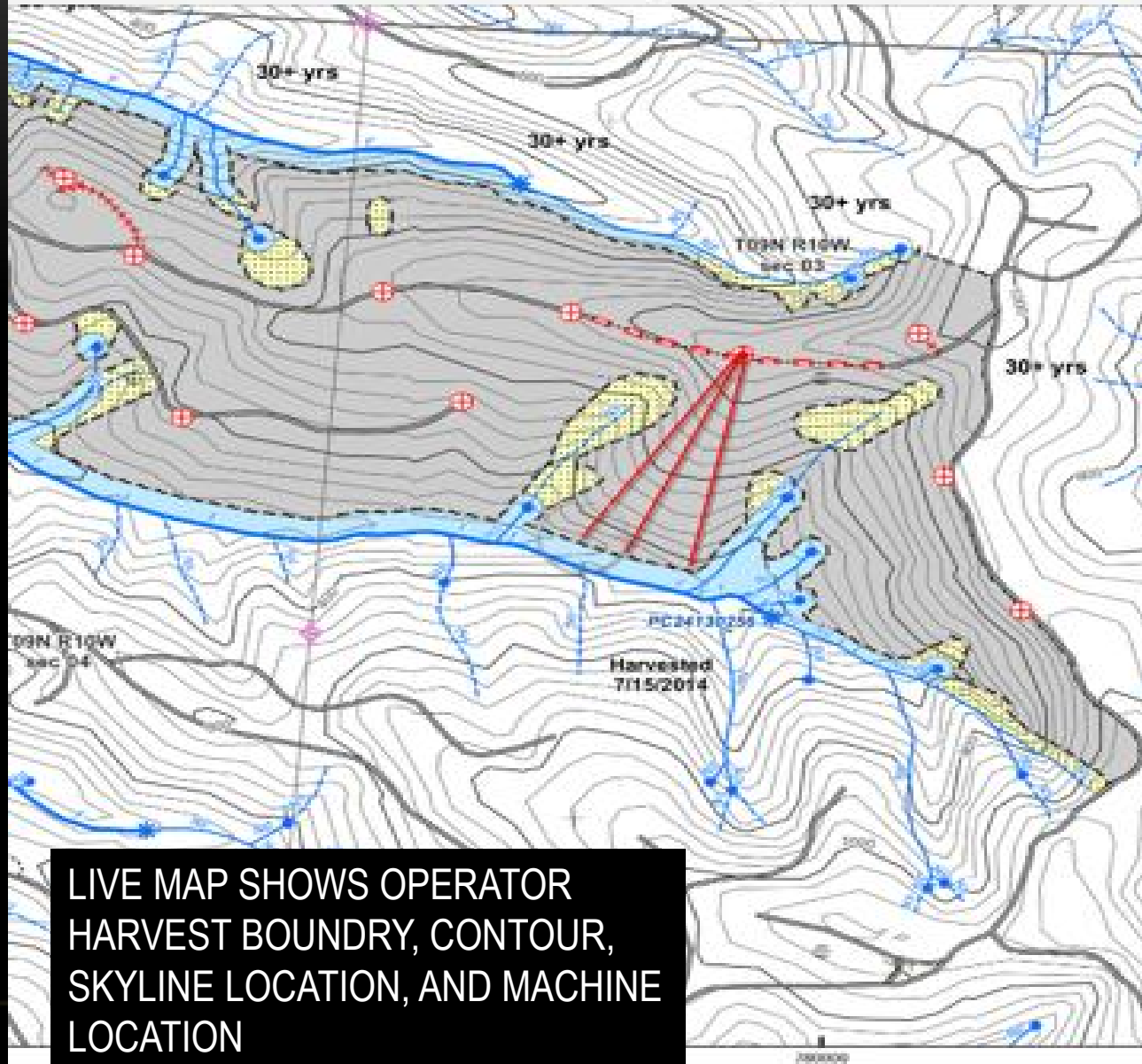
13.79 Acres (198.4°)



HARVEST MAP IS DISPLAYED ON TABLET IN HARVESTER CAB

9:15 PM

13045_contract Weyco Roger

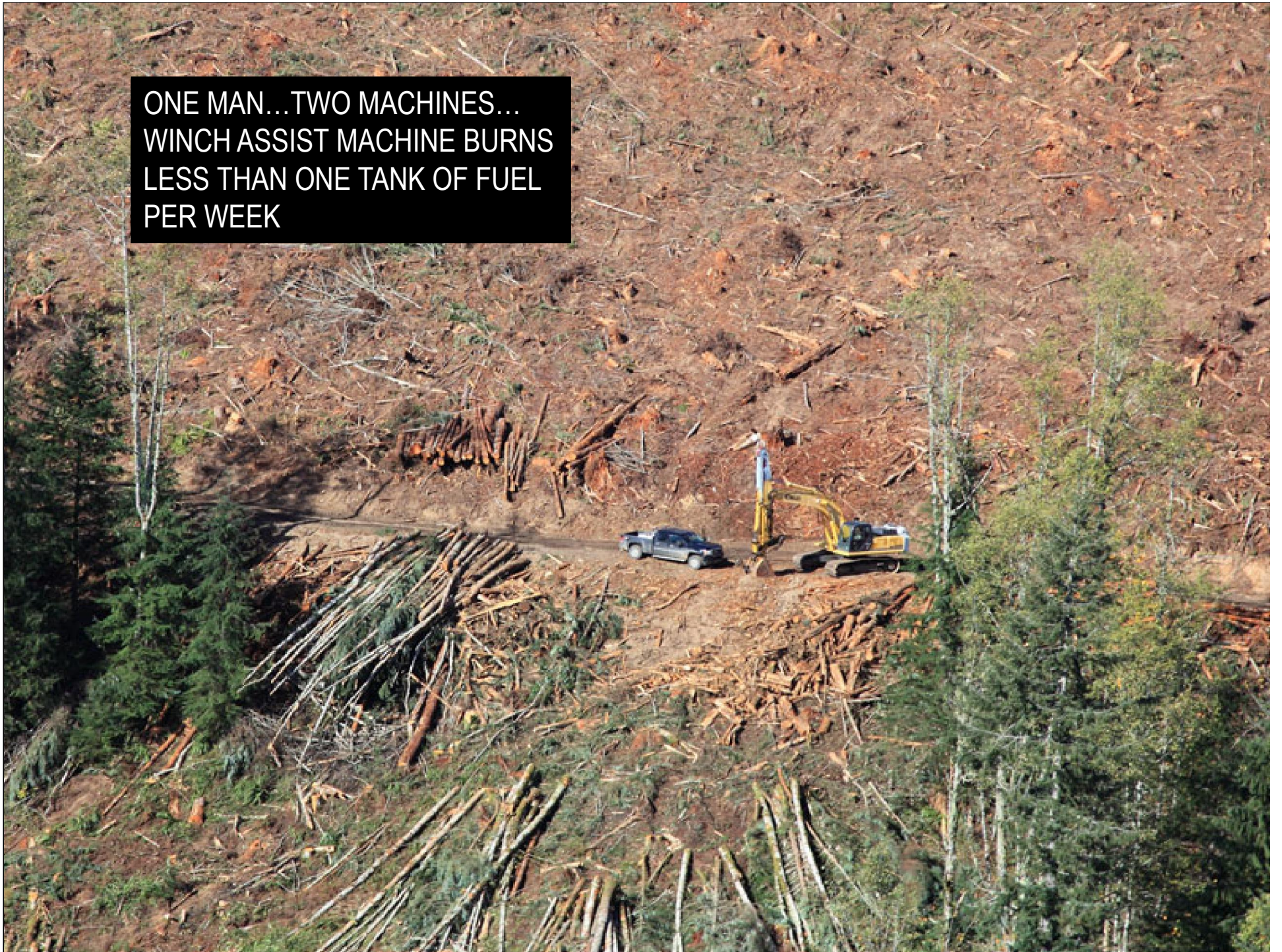


LIVE MAP SHOWS OPERATOR
HARVEST BOUNDRY, CONTOUR,
SKYLINE LOCATION, AND MACHINE
LOCATION

MEDICAL EVACUATION

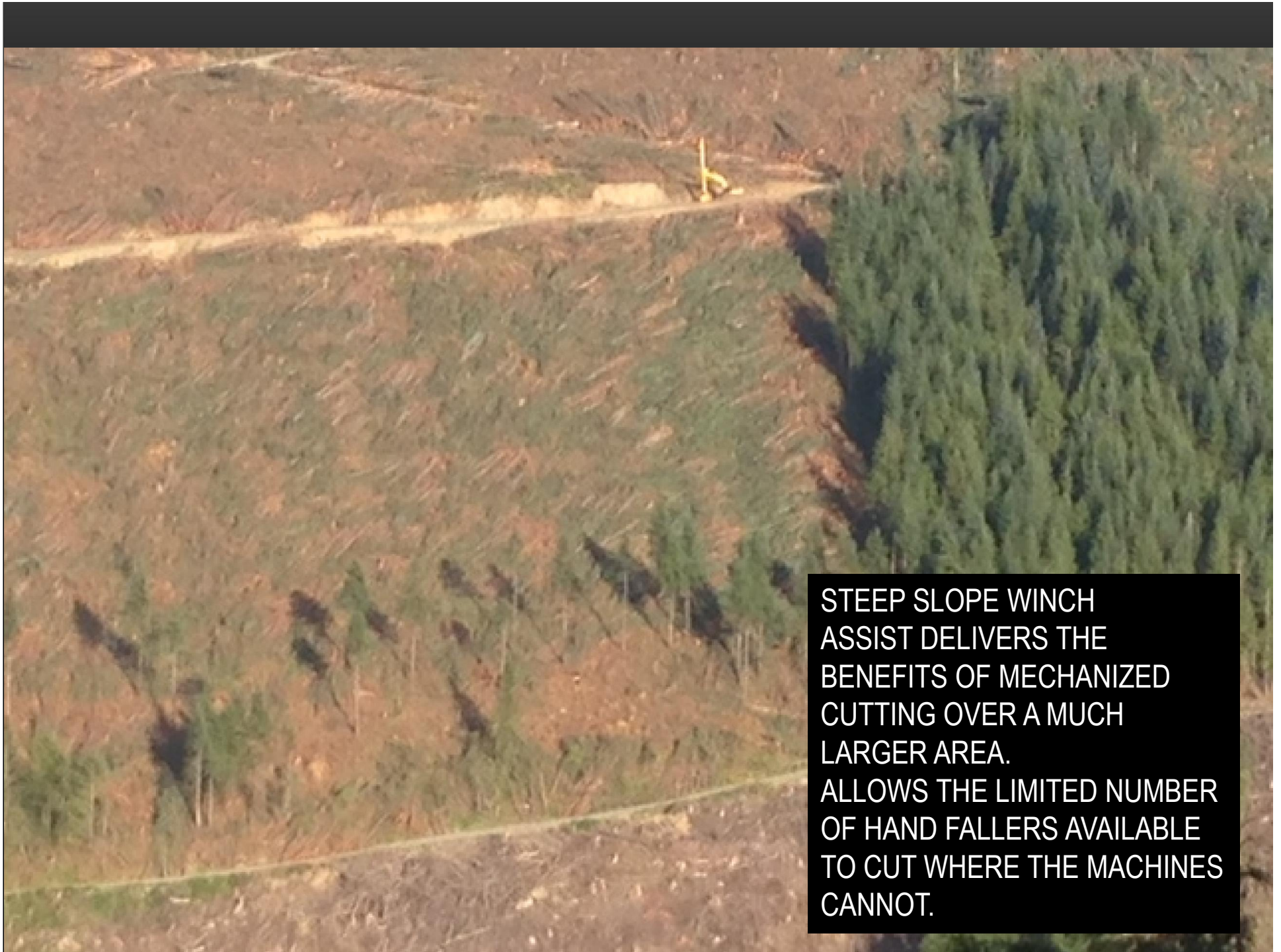
46.29504, -123.90842

ONE MAN...TWO MACHINES...
WINCH ASSIST MACHINE BURNS
LESS THAN ONE TANK OF FUEL
PER WEEK



CUTTING THE FIRST PATH
THROUGH THE JOB





STEEP SLOPE WINCH
ASSIST DELIVERS THE
BENEFITS OF MECHANIZED
CUTTING OVER A MUCH
LARGER AREA.
ALLOWS THE LIMITED NUMBER
OF HAND FALLERS AVAILABLE
TO CUT WHERE THE MACHINES
CANNOT.

WHY NOT USE STEEP SLOPE WINCH ASSIST?

- COST: CONTRACTOR HAS VERY HIGH CAPITAL EXPENSE AND MUST HAVE A RETURN TO JUSTIFY THE INVESTMENT
- LACK OF COMMITMENT BY TIMBERLAND OWNER: WHILE TIMBERLAND OWNERS HAVE THE MOST TO GAIN, THEY MUST WORK TOGETHER WITH THE LOGGER WITH A LONG TERM PERSPECTIVE.
- UNCLEAR REGULATION: CURRENT REGULATORY SITUATION IS UP-IN-THE-AIR. COMMON SENSE NEEDS TO BE USED TO INSURE OPERATOR SAFETY WHILE STILL ALLOWING INNOVATION AND EVOLUTION. DON'T LOOSE SITE OF THE DRAMATIC OVERALL INCREASE IN SAFETY.

SAFETY - PRODUCTION - QUALITY

1. Handcutters by far have the most dangerous job in the woods.
2. When timber is cut & stacked it is much safer for the crew.
3. Mechanized falling minimizes breakage, & results in less breakage when yarding.
4. On average we believe a tower side will cover nearly twice as many acres in a year.
5. Engineering has to change to include new techniques. Less road, larger landings for increased production.
6. Protecting resources – less roads, less culverts, less maintenance.

WHY THIS
MATTERS....

WE OWE IT
TO THEM!



THE EVOLUTION OF A REVOLUTION

THE EARLY DEVELOPMENT OF STEEP SLOPE WINCH ASSIST IN THE NORTHWEST

January 14 ,2016

Western Region Council of Forest Engineers

Valley River Inn, Eugene Oregon

Bruce Skurdahl

Summit Attachment & Machinery LLC

503-806-9323

skurdahl6@frontier.com