Forest Operations Training Center

Han-Sup Han, Ph.D.
Professor/Director of Forest Operations and Biomass Utilization
Ecological Restoration Institute
Northern Arizona University
Forest in the US West
- Unhealthy
- High hazard of forest fires
Forest Restoration & Fuel Reduction Thinning Treatments
Transportation

Logs

Wood chips
## Operational challenges?

*(Contractor Survey in AZ/CO/NM, 2020)*

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Issue Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>Finding skilled workers</td>
</tr>
<tr>
<td>6</td>
<td>High transportation costs</td>
</tr>
<tr>
<td>4</td>
<td>Limited forest products markets</td>
</tr>
<tr>
<td>4</td>
<td>Limited contract availability</td>
</tr>
<tr>
<td>3</td>
<td>Lacking the appropriate equipment for the job</td>
</tr>
<tr>
<td>2</td>
<td>Short operating seasons</td>
</tr>
<tr>
<td>1</td>
<td>Biomass disposal requirements</td>
</tr>
<tr>
<td>1</td>
<td>Others</td>
</tr>
</tbody>
</table>

*(n = 50)*
Why you choose internal training?

(Contractor Survey in AZ/CO/NM, 2020)

- Low quality external training: 2%
- High cost of external training: 8%
- Only option available: 90%

(#responses (n) = 40)
### Four Forest Restoration Initiative (4FRI) in Arizona

**Mechanical thinning and wood utilization employment for FY 2017**  
(Hjerpe and Mottek-Lucas 2018)

<table>
<thead>
<tr>
<th>Job Description</th>
<th>FTE Annual Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial logging</td>
<td>57.7</td>
</tr>
<tr>
<td>Support activities for agriculture and forestry</td>
<td>13.6</td>
</tr>
<tr>
<td>Electric power generation – Biomass</td>
<td>25.0</td>
</tr>
<tr>
<td>Maintenance and repair construction of highways and bridges</td>
<td>5.2</td>
</tr>
<tr>
<td>Sawmill</td>
<td>87.2</td>
</tr>
<tr>
<td>All other miscellaneous wood product manufacturing</td>
<td>8.0</td>
</tr>
<tr>
<td>Truck transportation</td>
<td>25.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>222.1</strong></td>
</tr>
</tbody>
</table>

- **12,450 acres treated in 2017**
- **Goal: 50,000 acres/year**
- **222 jobs**
- **800 – 1,000 jobs**
Training Programs

• Forest machine operators
• Truck drivers
• Repair & maintenance professionals

Target audience:
• Displaced workers from the closure of coal-powered plants and mining operations
• Returned/retired veterans
• Native Americans
• High school graduates
Source of Funding

- Economic Development Administration (EDA), U.S. Department of Commerce

- $350,000 over two years (Oct. 2020 – Sept. 2022)

- Focused on planning:
  - Training programs and curriculum development
  - Establishing collaboration and partnerships
  - Development of strategies for financial sustainability, student recruitment, and job deployment

- Start offering training programs in the fall of 2022
  - Need to apply for a new grant for implementation
Collaboration!!!

- NAU School of Forestry
- Community Colleges
- USDA Forest Service
- Coconino County
- Equipment manufactures
- Department of Defense
- State of Arizona
- Others
Thank you!
Enrollment Requirements

- High School Diploma/GED
- AGE 18 BY September graduation date
- Valid driver’s license
- Reliable transportation
- Lodging
- Able to study/work outside of classroom

SETTING

This is an Education TO Work program,
The expectation is to graduate and work as a logging contractor.
12-week foundational training program providing:

**Classroom Instruction (1 week)**
- Safety
- Tree Species
- Equipment responsibilities
- Merchandising
Monday – Friday (11 weeks)

- 6hrs. – In equipment
- 2hrs. – Woods Classroom instruction
  - Onsite GPS
  - Wood lot management
  - BMP’s
  - Onsite Merchandizing
Committed to Training Tomorrows Loggers!
Funding

- Put ME to work. (2015 Maine legislature)

- Industry partners
Partnerships / Industry involvement

- Professional Contractors of Maine (PLC).
  - Representing 200 Logging contractors in Maine.
  - We could not exist without them.
- Local equipment dealerships invested.
  - CAT / Weiler
  - Nortrax – John Deere
  - Daveco
  - Labonville Logging supplies
- Large land-owners
Equipment

-Wheel skidder-

-Track feller Buncher-
Equipment

- Tracked harvester
- Forwarder
- Wheeled harvester
How do we handle Risk

▪ We have separate insurance on the equipment (like a logging contractor would).
▪ We control the access to the job site with a gate (We treat it like a classroom).
▪ We work very slow & deliberate.
▪ 5 instructors to 6 pieces of equipment (Week 1-6)
▪ 5 instructors to 7 pieces of equipment (Week 7-12. We don’t run one of the processors at first).
▪ Everyone has a handheld radio (each instructor has a frequency that they use)

We focus on safety & quality tons!
Student Recruitment

Partnership between:

Northern Maine Community College & Professional Logging Contractors of Maine

Involvement with the Maine technical schools
- Forestry
- Welding
- CDL
- Diesel Mechanics
- Heavy equipment operation
- Outdoor adventure


Interviews
TV Commercials
for more information contact:

Donald Burr at (207)356-1541 or Dburr@nmcc.edu

Northern Maine Community College
Continuing Education Division at (207)768-2845
or nlbuck@nmcc.edu
HELO
Heavy Equipment Logging Operations

shastacollege.edu/loggingops
Agenda

- Introductions
- Heavy Equipment Logging Operations Certificate
- Sustainability & Partnerships
- Q & A

shastacollege.edu/loggingops
HEAVY EQUIPMENT LOGGING OPERATIONS
Certificate Program

SEMESTER ONE
- Intro to Construction Skills and Natural Resources or Beginning Welding (3 units)
- Equipment Operations and Maintenance (3)
- Surveying for Equipment Operators (2)
- Technical Applications of Mathematics or Computers in Agriculture and Natural Resources (3)
- Career Planning and Leadership (2)

Full Time Student

SEMESTER TWO
- Truck Driving, Class A & B License Training (3 units)
- Heavy Logging Equipment Operations and Maintenance (4)
- Equipment Operations Skills Development (2)
- Intro to Natural Resources (3)

Full Time Student

REGISTERED APPRENTICESHIP
Logging and Forest Workers
2,000 Hours OJT

WORKSITE LEARNING
On-site training with local industry employers (1-8 units)
Summer Semester + Semester 2, concurrent
Real World Environment

- Real world experience in a real world environment
- LTOs mentor and engage
- Industry culture is shared
Future Vision

- Cut-to-Length System
- Mastication
- Biomass
- Expanded Articulation Opportunities with Partner Colleges and Universities
- Drones: Forestry, Fire Patrol, etc.
- Electric Log Trucks
- Regional Training Center
  - Mass Timber Construction
  - Cogeneration Power
  - Wood Products Innovation

Image Credit: Alex Schreyer / UMass Amherst
Sustainability & Partnerships

Becky Roe
Senior Project Coordinator
Sustainability

- Commercial Timber Operator’s License
- Integrate log trucks/trailers with Class A/B License Training program
- Utilize contracts/MOUs to align instructional labs with real work

shastacollege.edu/loggingops
PHASE I
$3.2 Million Forest Health Grant (2019-2022)

$500,000 Registered Apprenticeship Grant (2020-2022)

PHASE II
$1.8 Million Forest Health Grant (2020-2023)

shastacollege.edu/loggingops
John Livingston
Faculty – Equipment Operations & Maintenance
jlivingston@shastacollege.edu

Rick Boontjer
Faculty – Logging Equipment Operations & Maintenance
rboontjer@shastacollege.edu

Becky Roe
Senior Project Coordinator – Forest Health
rroe@shastacollege.edu

shastacollege.edu/loggingops