RULES-OF-THUMB FOR IMPROVING LOG VALUE RECOVERY

NC Urban Wood Group

Look at your log carefully BEFORE bucking!

#1 – Know Your Market

Know your local processors and their standards for species, their preferred lengths and the smallest diameter accepted. Know what you can sell, and to whom. Then cut the log for the longest log possible, without dropping the grade for your target processor.

Before you cut, look carefully to make sure the diameter of the log at the small end is large enough to qualify for the intended log grade. This diameter is the "scaling" diameter which is measured inside the bark. A diameter tape can be used for determining log size before making a cut, but make sure to subtract for bark thickness.

Presentation Matters
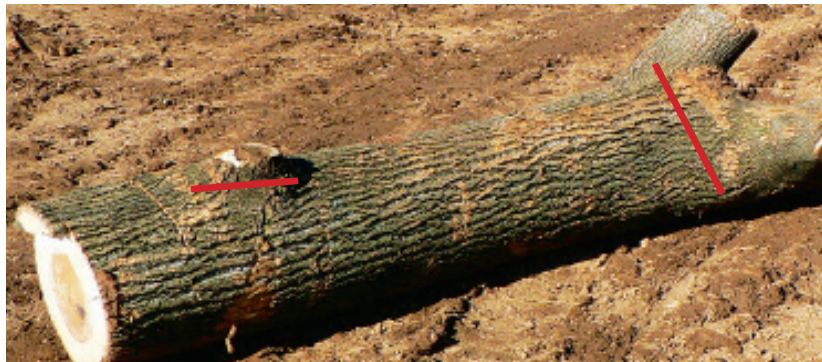
Cut logs to proper lengths without forks, crotches or untrimmed knots.
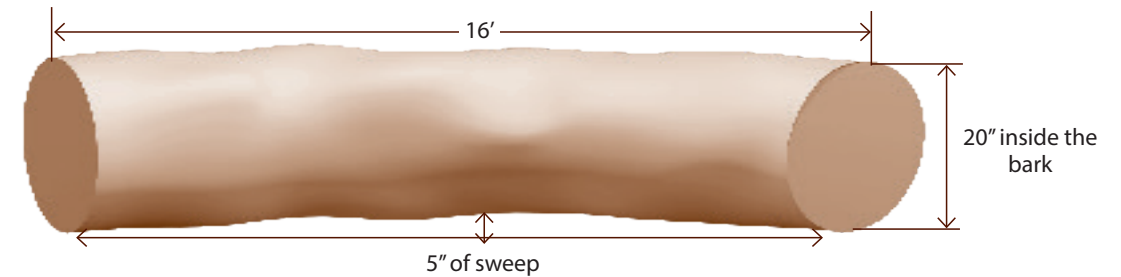
Standard Sawlog lengths are: 8', 10', 12', 14', 16' plus trim allowance which may be 3-8" depending on the processor. Most processors will not accept less than 12" diameter inside the bark on the small end of the log.

Cut knots flush with stem.

Note untrimmed knot and excessive sweep.

#2 – Make Them Straight

Place bucking cuts to minimize sweep and crook.

16'

20" inside the bark

5" of sweep

Sweep reduces the scale volume of the log. A 5" sweep can reduce log volume by 20-25%, depending on the small end diameter and log length.

Sweep can also reduce the grade of a log. Many grades also limit the maximum sweep allowed.

Maximum Sweep Allowance					
Sweep Deduction	10%		20%		25%	
Diameter	8'-10'	12'-16'	8'-10'	12'-16'	8'-10'	12'-16'
12"-13"	2"	3"	3"	4"	4"	5"
14"-15"	2"	3"	4"	5"	4"	6"
16"-18"	2"	3"	4"	5"	5"	6"
20"+	3"	4"	5"	6"	5"	6"

Example: A 12' log at 15" sed and 3" sweep has a 10% deduction in the scale of the log.

% SWEEP: How to calculate

8' and 10' logs

$$\% \text{ sweep} = \frac{\text{sweep} - 1"}{\text{*s.e.d.}}$$

12'-16' logs

$$\% \text{ sweep} = \frac{\text{sweep} - 2"}{\text{*s.e.d.}}$$

*s.e.d. = small end diameter

16 ft

12 ft

As cut, a 16' log with 8" of sweep and one large defect:
144bf - 38% = 90bf

While cutting at 12' would have made a straight log with one large defect 127bf. As well as the possibility of an additional log from that tree, if properly placed.

Look for the best log that can be cut from the stem and work around that log.
Often times, this log is NOT the very butt of the log.

A 12' log with 20" s.e.d., 4 side clear log above an 8' 21" s.e.d., 3 sided butt log.

Below:

HW Buck: the optimal hardwood bucking decision simulator finds two Prime logs and returns $16 more.

http://forest.mtu.edu/

Multiple clear logs above defective butt.

A clear log above a 4' bulge.

Optimal Solution Returns $136.65

8' Prime	8' Prime	8' #1
15" sed	14" sed	12" sed
2" sweep	2" sweep	2" sweep
7%S 7%C	7%S 7%C	8%S 8%C
65.00bf	56.00bf	37.00bf
$58.50	$50.40	$27.75

Bucker Solution Returns $120.75

8' #1	8' #2	8' #1	8' #1
15" sed	14" sed	13" sed	12" sed
4" sweep	1" sweep	2" sweep	2" sweep
20%S 20%C	0%S 0%C	8%S 8%C	8%S 8%C
56.00bf	60.00bf	46.00bf	37.00bf
$42.00	$16.50	$34.50	$27.75

11' 8"   6' 8"   7'
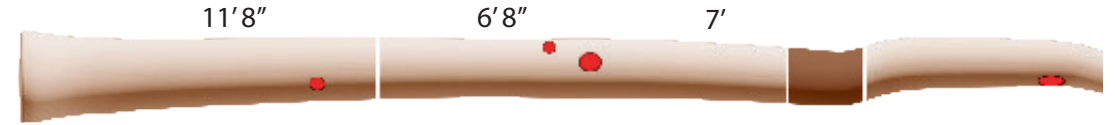
Defects at the ends of logs produce long clear cuttings that allow better LUMBER to be cut from the log.

12'

8"

10'
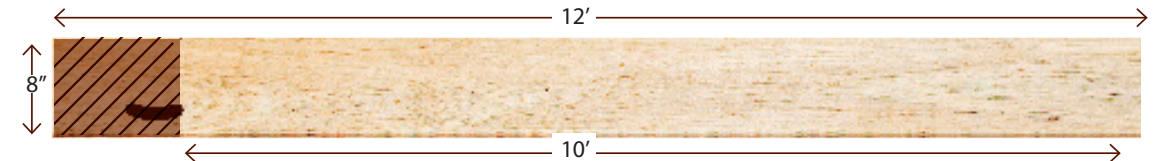
Note: Minimum yield 83.3% clear wood cuttings on the poor face of the board.
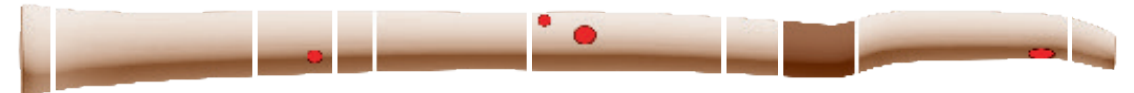
12'

8"

5'   5'
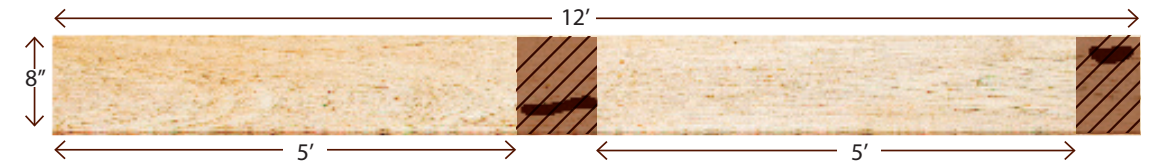
Example of ash lumber with long clear cuttings.

Lumber grading rules reward for long clear boards. The more clear cuttings the higher the lumber grade. Therefore, logs with longer clear cuttings will produce higher value lumber.

HOWEVER... LOG grading rules often disregard LUMBER grading rules!

Optimal Solution Returns $192.20

Bucker Solution Returns $115.42

Bottom Line:

Using this rule will produce better boards, but clear face grading rules may not reward the resulting log with a higher grade.

SO KNOW YOUR MARKET!

URBAN HARDWOOD RECOVERY PROJECT

www.sustainableresourcemanagementinc.com