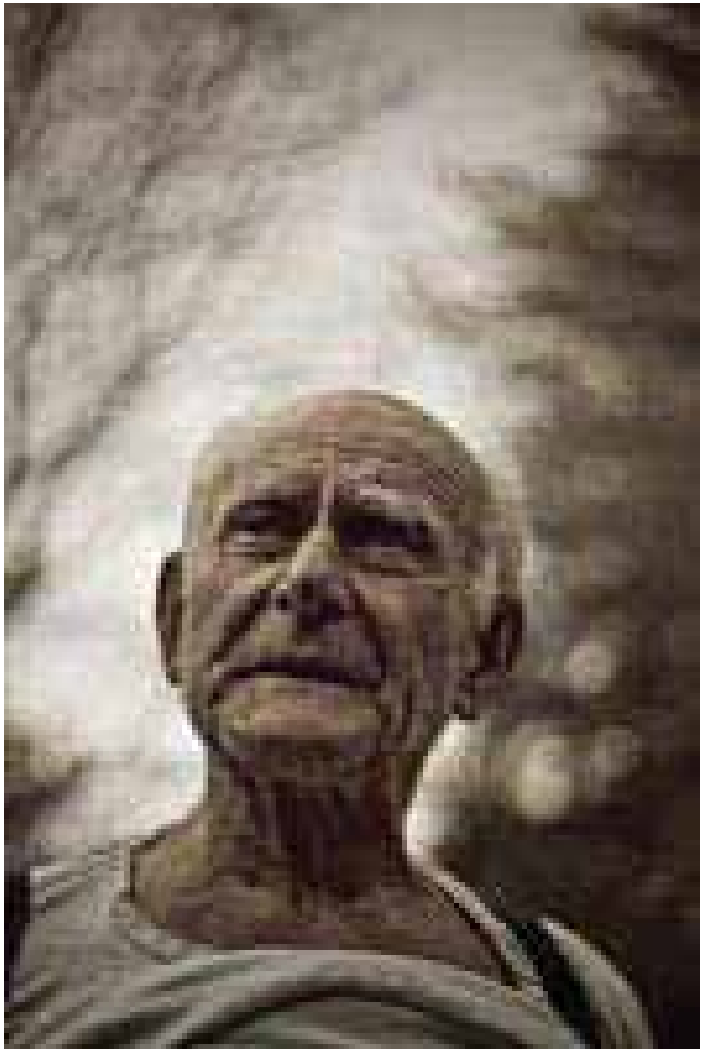
LOG FRESHNESS

An overview of Douglas Fir log age related quality issues/their timing and prevention

April 6, 2011

Let's talk "Age Problems"?



Tree harvest starts a biological clock ticking on the degradation process

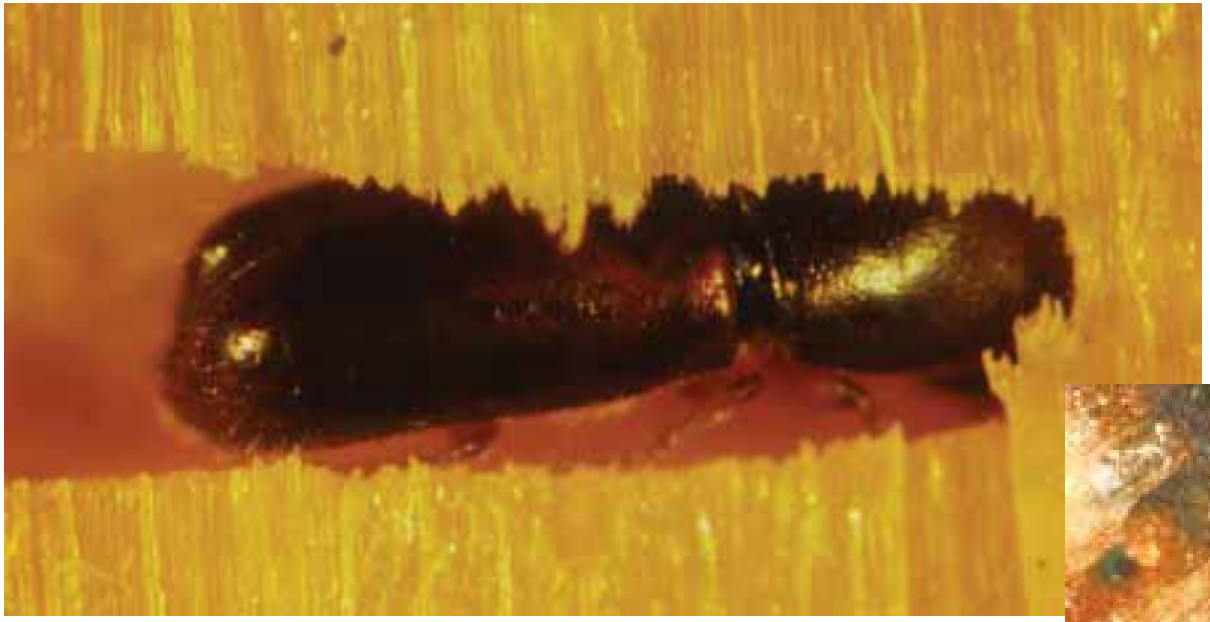
Log freshness is a critical component of log value

Degradation Issues

- Wood boring insects
  - Ambrosia Beetles
  - Flathead Borers
  - Bark Beetles
- Mold
- Sap/Age Stain
- Weather Checking

Log freshness is a critical component of log value

Ambrosia Beetles



Trypodendron lineatum

Ganthotrichus sulcatus

Gnathotichus retusus

Flights and attacks initiate when temperatures approach 50F and can persist through the summer

Ambrosia Beetles

Gnathotrichus sulcatus
Gnathotichus retusus

Ambrosia Beetles – Entrance holes (frass)

Ambrosia Beetles – Entrance holes with bark off look like pin holes

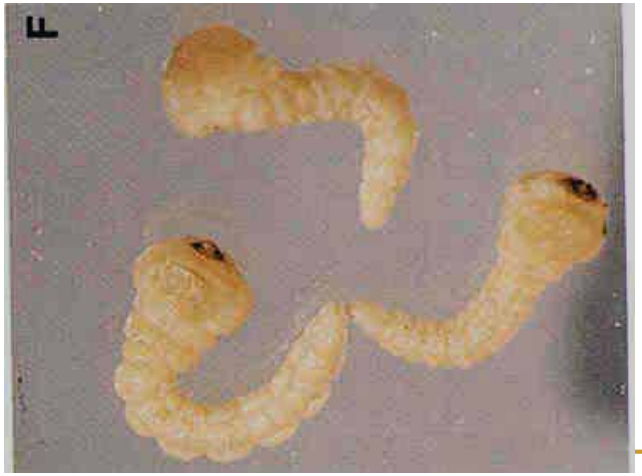
Ambrosia Beetles – Damage

Wood Borer Group : Coleoptera: Buprestidae Flatheaded Borers

Golden Buprestid: Buprestis aurulenta

Important Genera:

Buprestis, Chalcophora, Chrysobothris, Melanophila, Dicerca and Acmaeodera



Larvae: **Chrysobothris** mali.

Dicerca divaricata

Flat Headed Fir Borer

Flat Headed Fir Borer – Galleries and entrance hole

Douglas-fir Beetle and associated bark beetles

Dendroctonus pseudostugae

First population attacks downed logs in late April to May

Brood developing over the next 8-10 weeks

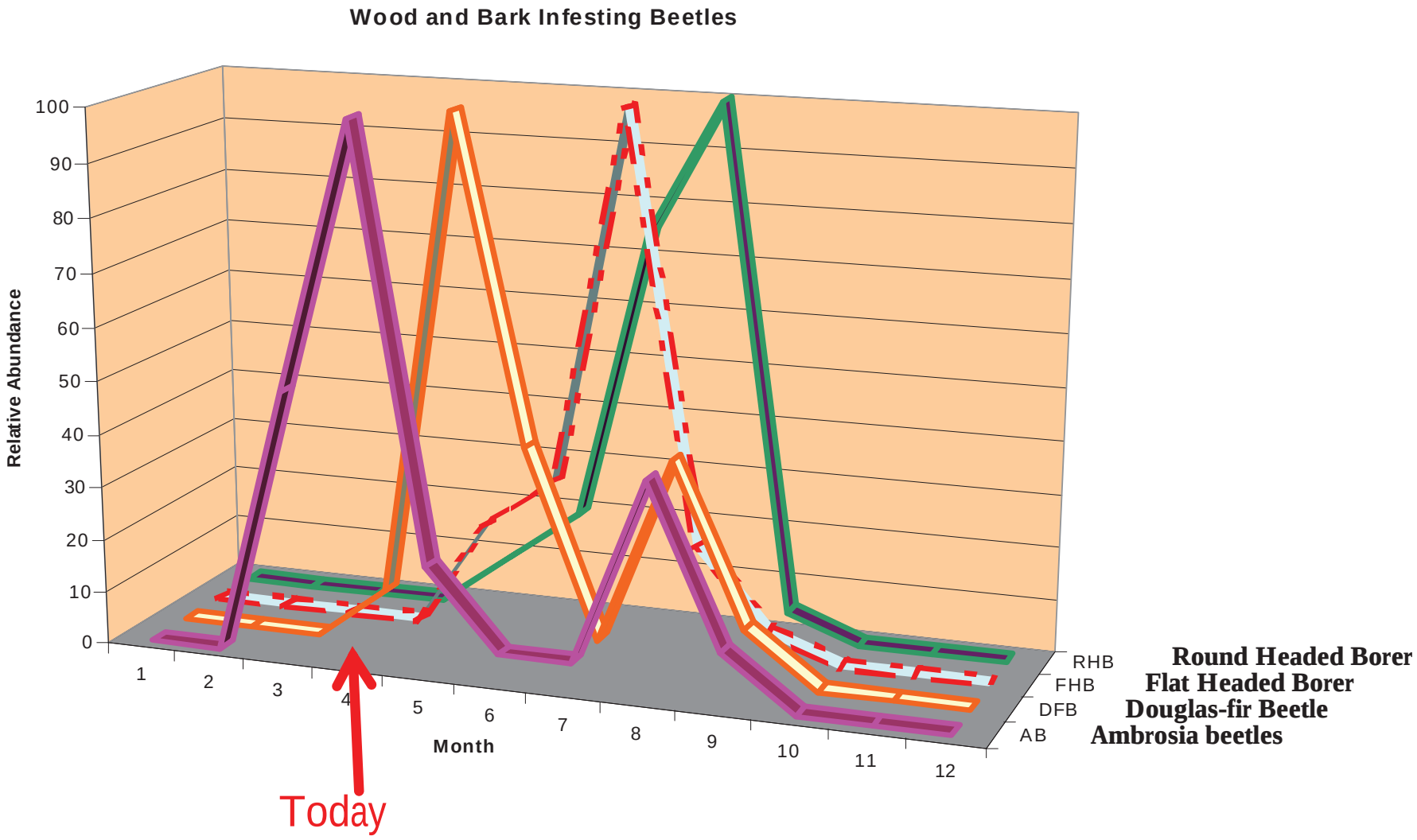
Second generation (July) may occur in epidemic years

Bark Beetles – April through November

Bark Beetles

Bark Beetles – Galleries

Succession of bark and wood infesting beetles throughout the year

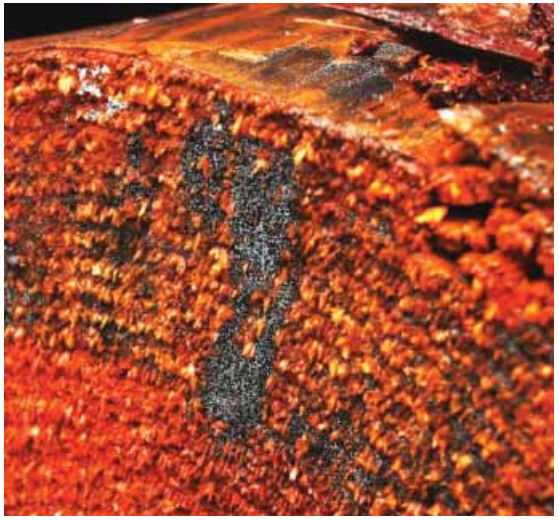


Review: Fungology 101

- Mold Fungi-
  - specialized microbes (fungi) that derive their nutrients on the sapwood surface but do not penetrate into the wood to any appreciable depth

Trichoderma on DF

- Sapstain Fungi-
  - derive nutrients from stored contents in ray parenchyma and tracheid cells, may partially degrade wood cell walls



Graphium on DF

Mold

Molds can appear in a relatively short time and can come in different colors.

Mold

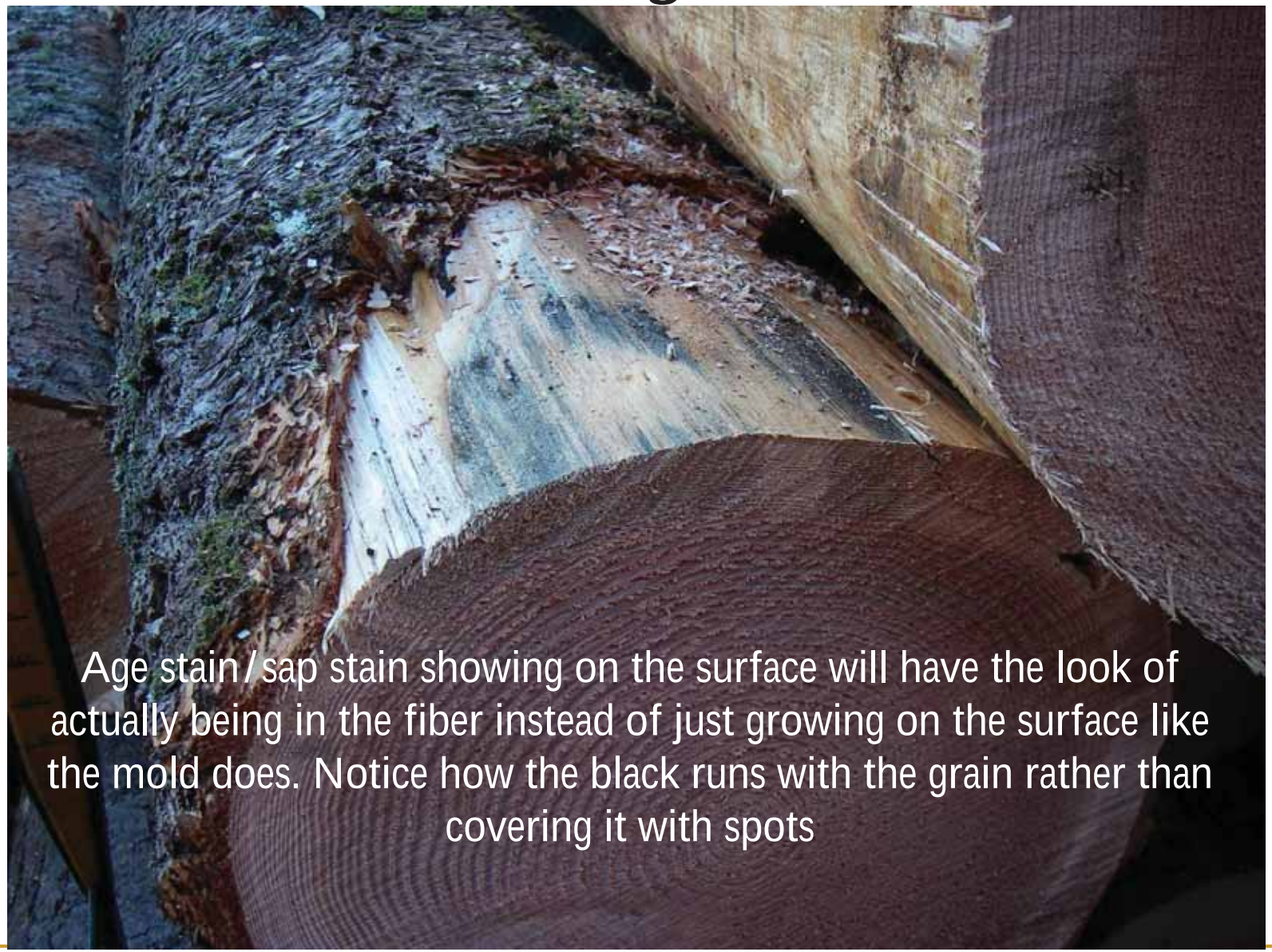
Mold comes in many different colors.

Mold – Surface Mold

Surface mold can appear within days of cutting the tree down if the bark has been knocked off. Surface mold does not penetrate into the fiber.

Mold – Surface Mold

Mold – Surface Mold or Age Stain?

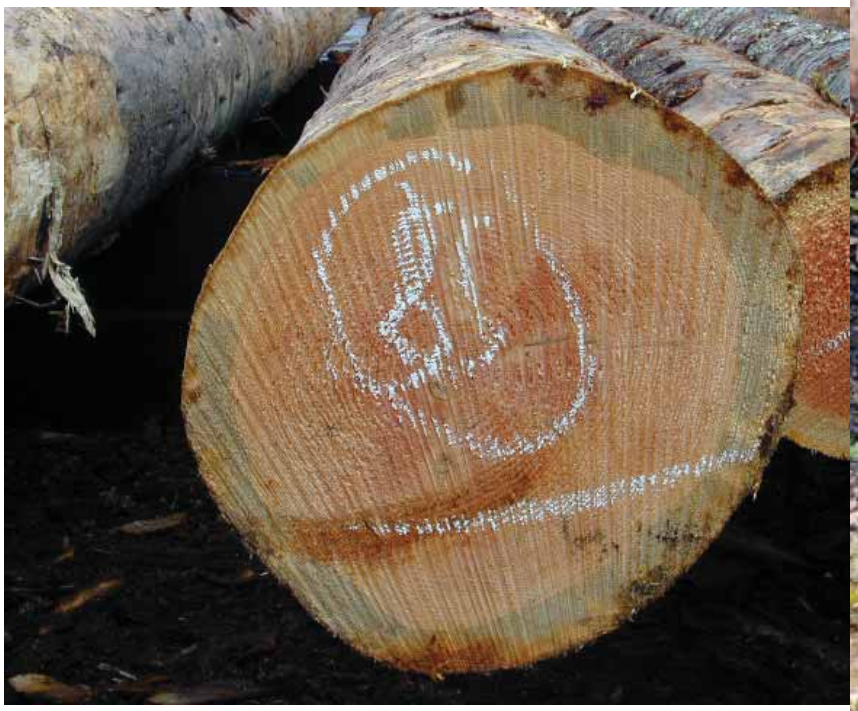


Age stain/sap stain showing on the surface will have the look of actually being in the fiber instead of just growing on the surface like the mold does. Notice how the black runs with the grain rather than covering it with spots

Sap Stain

- Sap stain is a discoloration caused by microscopic fungi that commonly infect only the sapwood of trees, using parts of the sapwood (including simple sugars and starches for food).
- Sap stain will develop whenever the required food, oxygen, temperature and moisture conditions are available and the fungi is present.
- Optimal conditions tend to be in the fall, but can occur during a wet spring.

Sap Stain



Sap Stain

Segments from logs in customer's log yard- October 2009

Sap Stain in lumber

Weather Check

Degradation Prevention

TIMING!

- Process and transport logs to processing mills as soon as possible after felling.
- All log and felled tree inventory must be kept to a minimum at all times, but TAX TIME TO TURKEY TIME is an especially critical time for log freshness.
- Lumber can be treated to prevent mold and fungi growth

Log freshness is a critical component of log value

Anti-Stain lumber treatments

Trial DF treated versus untreated

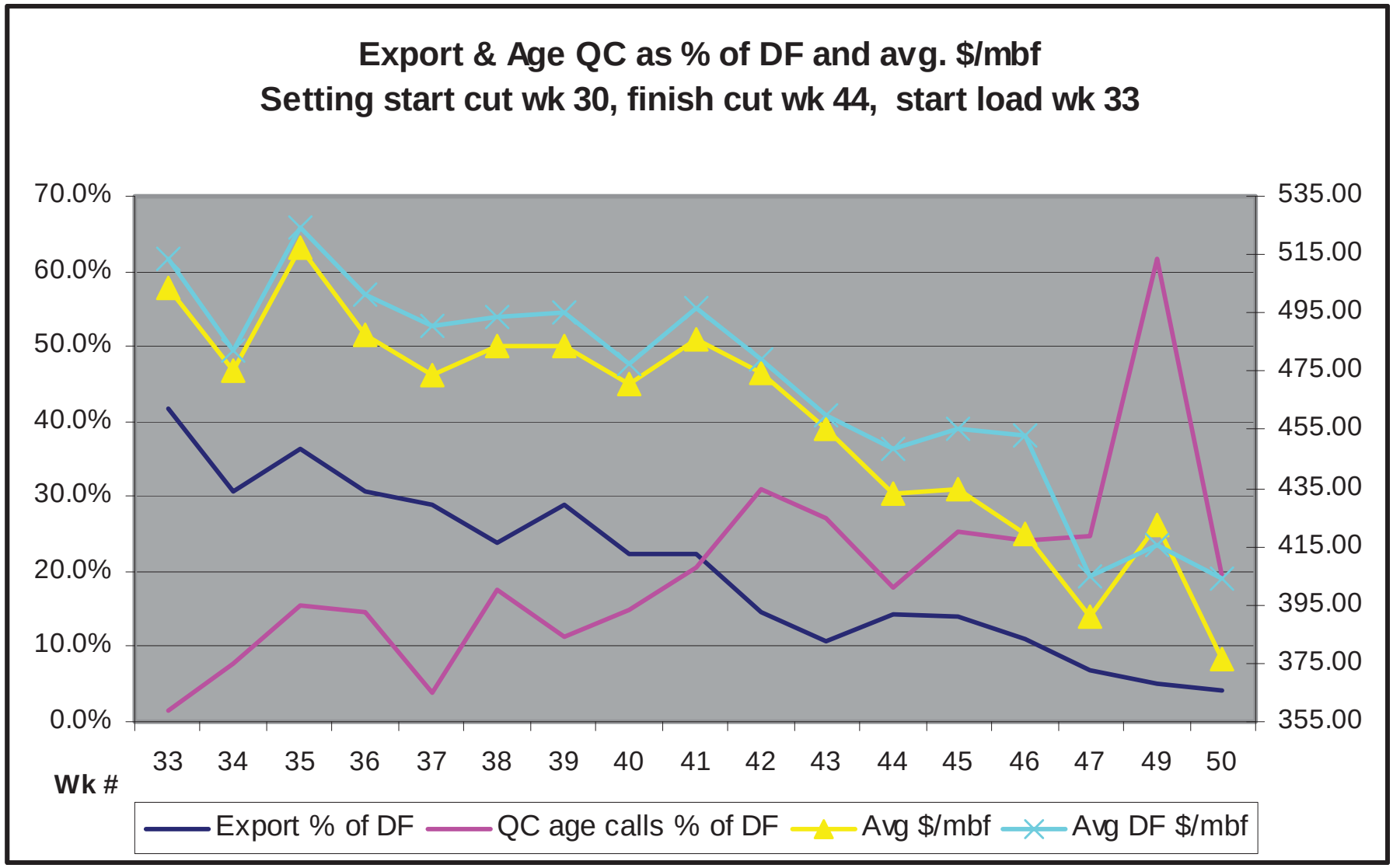
The Clock is ticking

Get ‘em yarded

Get ‘em processed

Get ‘em loaded

2008 Setting with Age Stain and Mold



2008 Setting with Age Stain and Mold

		Douglas Fir avg. $ mbf	All Specie avg. $ mbf
1st eight weeks	Wk 33-40	$498	$488
2nd eight weeks	Wk 41-47	$461	$446
Cleanup 2 weeks	Wk 49-50	$412	$405
All weeks	Wk 33-50	$475	$462
Difference between first 8 weeks and second 8 weeks			
	mbf loss	$37	$42
Total value loss on 2nd eight weeks		$36,136	$46,598

Any Questions?