

Bowling Grain: Patterns on Purpose

Wells Shoemaker, October, 2022



Here's a rather large redwood disc...destined to become a Thanksgiving dinner dimension shallow bowl. Do we mount this blank center pith up...or down?

It makes a difference! That decision needs to be made before any next step. A turner makes same decision with a square blank purchased from a vendor.

It's ideal to make the choice on purpose instead of hoping you'll be happy with the pattern.

John Wells displayed a schematic diagram of a crosscut log at his recent Open Studios venue, illustrating the grain patterns of a bowl taken from different orientations within the log. We've discussed that in our chainsaw demonstrations, too. (Appendix p 18). I thought it would be interesting to show photo illustrations of how turners can determine what grain pattern we get, based upon how we mount a blank.

Some master turners assert that the aesthetic form of a bowl is more important than the wood itself. That can be true, especially if the form is clunky, but most of us were initially attracted by working with the wood itself. One of the "insider" joys of turning is to watch the secrets of the log unfurl before our eyes as our tool peels down through decades of summers and winters, sun and storms, fire and rain, maybe fungi and bugs.

Some of the novel grain patterns in a bowl relate to intrinsic features within the wood—quilting, knots, pigmentary contrasts, crotch figure, and more. Other features stem from intentional choices made by the turner when initially mounting a blank. *This part at least...we control!*

Our primary choice is whether to create a bowl or platter with the center of the tree "up" at the open mouth of the bowl, or "down" at the narrower base. The results are strikingly different, as you can see in the photos to come, and they both can be gorgeous. Obliquely cut or quartersawn blanks offer still different intrigue.



We virtually always strive to exclude the pith—the actual center of the log—in a bowl, as radial cracks emanate from the pith and tend to make problems.

This isn't a hard and fast rule. For some blanks with burl, spalting, or with certain species, we can get away with leaving the center pith in...perhaps best attempted in experienced hands.

This soft maple blank has a really prominent, punky center pith...unwelcome in a finished bowl. We'll turn that away promptly.

For all the photos below, the actual center pith has been deleted, but the blanks and bowls will be labeled shorthand as "pith up" or "pith down." The patterns will be different in predictable ways. Appendix p 18-19 illustrates pitfalls of including the actual pith.

Inside Perspective: Pith Position Makes a Difference!



Pith down, sequentially diminishing ellipses, Norway Spruce

These two turnings have quite different grain patterns.
Why? ...and...can turners choose the one they want? (yes)



Pith up, symmetrical "Rorschach" pattern. Douglas Fir

Side Views: Blanks with Center Pith Position Down and Up



Pith Down



Pith Up

(Blanks in rough out stages...tenons still present)

See next page & Appendix p 18-19 for illustrations of why we don't include actual center pith.

More Detail: Pith Up. This is by far the most common choice since a crosscut log is obviously widest near the center. The further you go from the center, the smaller the width. Most turners crave larger diameters for practical reasons (more salad, more glory, maybe even more money). At some point approaching the perimeter, you'll transition from heart wood to sapwood, often with color changes, texture changes, and intriguing patterns. Thinking of it in a different way, pith up means you will be looking past the older wood at the mouth of the bowl into the younger wood at the bottom.



This pith up ash bowl illustrates the “Rorschach” symmetry patterns in the base of the bowl where the cuts are running more and more tangentially. Note the incidental detail of darker pigmented, older wood closer to the center of the tree.



Pith up redwood deep bowl



...and its shallower core

The shallower bowl has wider tangential cuts with a more “spread out” pattern
Need scale? The deck boards in the background are 2x6’s—5.5” (14 cm) wide.



Pith up Coast Live Oak bowl

Note the natural pigment contrasts of dark mineral “extractives,” yielding intrigue beyond the simple symmetry.

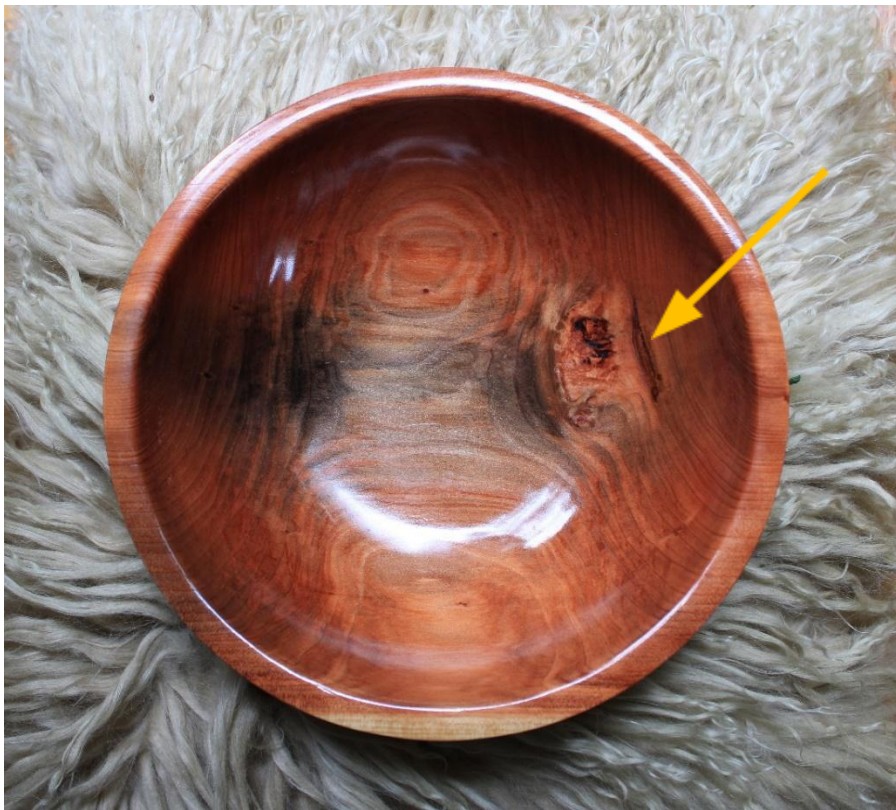


Pith up Monterey Cypress bowl with a knot

Distortion of the pure symmetry is not a bad thing! Note contrast in pigment of the darker heartwood and the paler sapwood. See a bird’s eye in there?



Pith up patterns with similar, symmetrical "hourglass" heartwood isthmus and dramatic pigment contrast *Black Acacia (L)* and *Chinquapin (R)*



Pith up figure with bonus burl scar and iron oxide pigment from a nail placed >50 years ago, overgrown and encased by a vigorous, second growth redwood across the street from my shop. Faulty photo technique (glare) created that happy face smile.

Pith Down means you'll be looking from the younger wood in the tree down to the older wood, counting down growth rings as you go. These take the form of concentric circles (more accurately ellipses) of progressively smaller dimension. It's a wooden topo map!



*Pith down, roughed out Douglas Fir bowl
The contrast of winter and summer growth make a prized grain pattern*



*Large, finished, pith down Norway Spruce platter
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By definition, **natural edge bowls are pith down**. Your eyes travel inward...past the bark and the adjacent cambium layer, through the pale, younger sapwood, down to the older wood. It's a journey through time that can cover human generations at a glance.



Black acacia from my early days



Paper birch—Thank you for this blank, Bill Arnold



Square bowls from round logs—same rules. Contrast the symmetrical, pith up pattern above (birch) to the pith down pattern below (maple). The birch has prominent grain patterns but uniform pigment. The caramel heartwood of the maple creates an additional, visually captivating contrast to the cream colored sapwood.



Crooked Turners! Naah...”We’re Revolving Libertarians.” Santa Cruz Woodturners are blessed with large local trees—some from the 19th century or earlier: redwood, cypress, oak, bay, walnut, sycamore, avocado, Douglas fir, & madrone, for starters. The centered cuts featured in the above examples yield refined symmetry. But in our community, we don’t always follow orders, and we can take liberties with large rounds.

Oblique cuts create non-symmetrical patterns. Do this on purpose and win a prize!



Madrone bowl, mostly pith up but cut obliquely. The exotic central pigmentation is captured asymmetrically, with a wide rim to display the colors. *Thank you, John Wells, for supplying our club with many truckloads of this enchanted wood after the 2020 fires.*



Oblique cut ash bowl. This one is pith down, but not centered, resulting in growth rings of descending radius, but “skewed” to one side instead of symmetrical. Note also pigment from an ancient nail in the younger, peripheral wood. *Thank you, Dan Aldridge, for this large blank of Modesto Ash harvested from an urban sidewalk!*



The shallower core from the above, larger bowl. Wider appearing rings.

Quarter sawn wood has the supreme virtue of stability as it dries. Quarter sawn grain tends to shrink obediently with minimal deformity, making it the premier choice for things you want to sit flat, like platters, or stay straight, like table legs and functional spindles.

Pith up blanks (and planks, too) tend to warp with the upper surface going convex as it dries. Pith down? Reverse: upper surface of blank (or board) goes predictably concave. Oblique cuts? That's a crap shoot, especially with compression wood, knots, or burl.



Quarter sawn Modesto Ash platter

Characteristically, the growth rings are almost linear. In this one, the darker wood at the top is the more central wood, closer to the pith with more mineral extractives accumulated over time.

Some blanks, of course, don't reveal location of the pith...and it doesn't really matter. It's the turner's task to liberate the magic within and go with what the tree offers.



Large oak burl with gaudy fungal mischief and insect markings



High desert, coiled Utah juniper knuckle



Classic redwood burl

Hard to know what's up and what's down with these!

It's probably irrelevant whether pith was up or down when exotic character rules



110 year old black walnut stump wood from Westside Santa Cruz



Nest of shallow, maple burl bowls

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*Oblique cut, gloriously figured Bay Laurel stump from Felton
Thanks, Dwain, for making this connection!*

Next time you have 2 blanks of similar size from the same tree, try turning one pith up and the other pith down.

Wells Shoemaker
Past President 2020-2021
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Appendix next pages

Appendix: Purposeful Turning: Bowls, & Grain

Selected Videos and Resources

Mike Mahoney, master turner, legendary teacher, technique pioneer

Website: [Home - Mike Mahoney - Bowl Maker Inc.](#)

Website has beautifully produced educational videos for sale.

Memorable YouTube video on chainsaw cutting bowl blanks from a large log;

[cutting wood to make bowls.mov - YouTube](#)

Glenn Lucas, master turner, phenomenal teacher, tool designer, & woodsman

Website:

[Woodturner's Store - Glenn Lucas Master Woodturner \(glennlucaswoodturning.com\)](#)

Series of videos for sale...congenial, clear, encouraging, and inspiring

Ed Pretty, master of clarity & wit, experienced teacher with wide range of interests

Website <https://edswoodturning.com/>

In particular, his video topic “Beyond ABC” for bowls is exceptionally helpful at every stage of experience, one of SCW’s favorite remote demos during the pandemic.

Kirk deHeer, master instructor at Craft Supply, author of free, polished series of 1 hour “Woodturning 101” demo topics. Go to Craft Supply’s Home Page, open link to series.

[Pen Making, Bowl Turning, Wood Lathes, Wood Blanks, and Turning Tools for Woodturners | Craft Supplies USA \(woodturnerscatalog.com\)](#)

Kirk and Gary deHeer’s wood blanks website: <https://www.acutabovebowlco.com/>



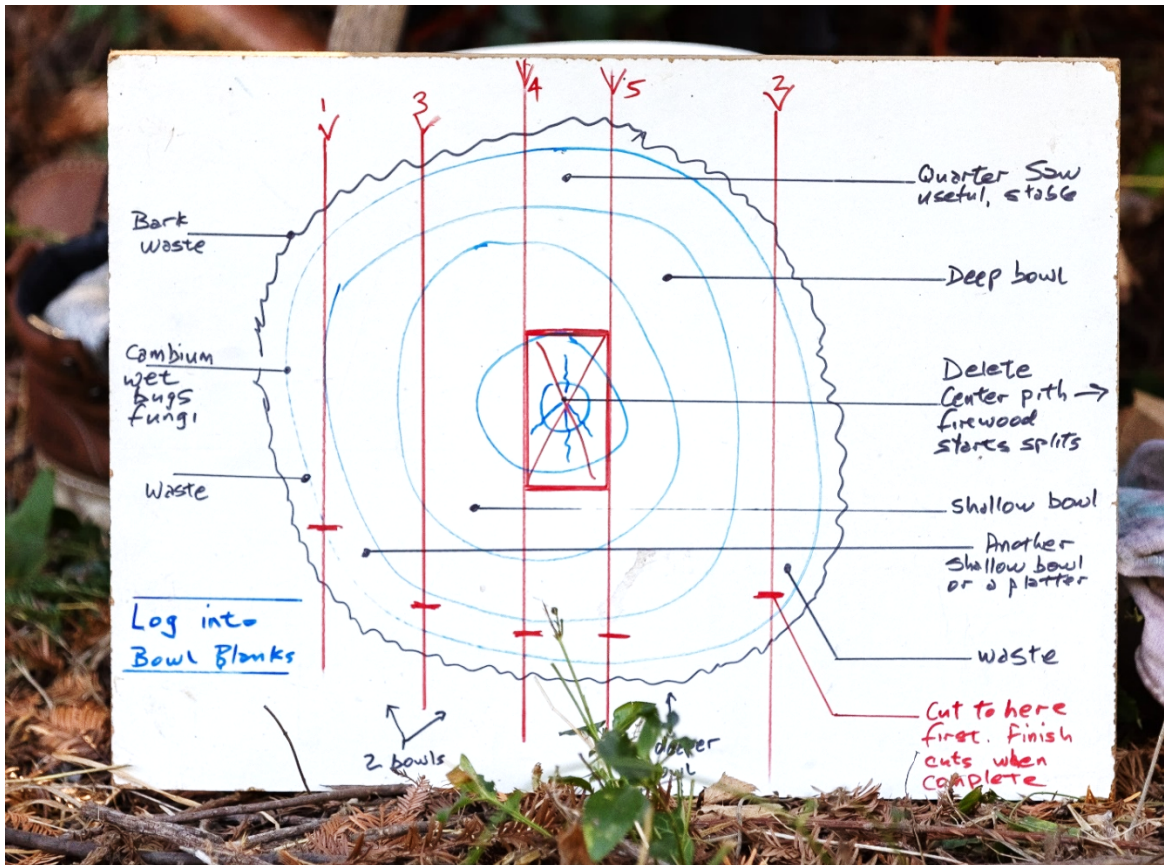
Professional forestry savvy, turning focused, family endeavor

Utah Great Basin poplar (Oblique cut)

Schematic of Cuts: Round to Blanks

From SCW's Chain Saw Derby July, 2020

Mahoney video above highly recommended if this is new to you



Why all the fuss about deleting the center pith? See below and next page!



Radial crack emerging from ill-advised inclusion of center pith in a holly blank.

Pre-existing defect (pigmented wood below the center) likely aggravated the split.

Not sure this is worth saving.



Cross cut live oak disc that dried with a radial crack that created a gaping 25 degree wedge after shrinkage along the circumferential growth rings. Look closely and there are two cracks, the smaller interior one connecting with a much larger peripheral one with a “ring shake,” one of the most dangerous wood deformities a turner can mount on a lathe.



Oak round cut just 3 weeks prior...but not roughed out. Seven visible radial cracks have already appeared from the included center pith.

Live oak is a “dynamic” shrinker, similar to madrone and sycamore. These shouldn’t wait for roughout!

We heat our house with a woodburning stove, so this is not a total loss.