

## Fluorescence in some common US wood species.

Several woods native to or commonly found in the United States fluoresce under black light (long-wave UV light, typically around 365 nm), glowing in colors like yellow-green, green, white, or other hues.

This property comes from certain compounds in the wood (like flavonoids or other extractives) that absorb UV and re-emit visible light. Fluorescence helps in wood identification (e.g., distinguishing similar-looking species), turning, or artistic effects. It can vary by sample freshness, exposure to sunlight (which often diminishes it over time), specific piece (heartwood vs. sapwood, streaks), and even environmental factors. Freshly sanded surfaces often show it best. Most woods do *not* fluoresce strongly—it's a distinctive trait for certain species.

### Prominent US Woods That Fluoresce

Here are key examples of woods native to or widely associated with North America:

- **Black Locust (*Robinia pseudoacacia*):** One of the strongest and most reliable fluorescers. It emits a **bright, uniform yellow-green glow**, especially in heartwood. Native to the eastern US, it's often used to distinguish it from look-alikes like mulberry (which does not fluoresce). Sapwood may react less. It holds up well and is popular for this effect in woodworking.
- **Honey Locust (*Gleditsia triacanthos*):** Similar to black locust—**bright uniform green**. Native to central and eastern North America.
- **Osage Orange (*Maclura pomifera*),** also called hedge apple or bodark: Shows fluorescence, often in streaks or with a notable glow under UV (yellowish tones). Native to the south-central US (e.g., Texas, Oklahoma, Arkansas). Heartwood is bright yellow naturally and changes with light/oxidation.
- **Staghorn Sumac (*Rhus typhina*):** **Brilliant white sapwood and yellow-green heartwood.** Common in the eastern US; striking for turning projects.
- **Buckthorn** (various species, e.g., common buckthorn): **Most of the sapwood fluoresces** (medium uniform green). Present in parts of North America.
- **Boxelder (*Acer negundo*):** The **red fungal stain** often causes fluorescence (pinks/oranges noted in some observations). Widespread across the US.
- **Red Oak** (and some other oaks): **Faint streaks in heartwood.** Common across much of the eastern US.
- **Eastern Redbud (*Cercis canadensis*):** **Medium green streaks.** Native to the eastern US.
- **Conifers/Pines** (e.g., white pine, Scots pine, white cedar, Norway spruce): **Pitch/resin** often fluoresces. Common across the US; not the wood itself as strongly.

Other mentions in US contexts include mesquite (faint to medium green streaks, Southwest US), sassafras (some orange/red streaks), elm (faint yellow/green), and certain ironwoods.

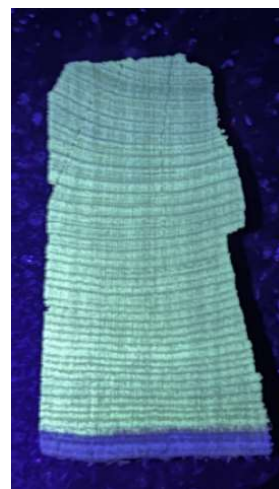
## Nuances and Considerations

- **Variability:** Not every piece of a "fluorescent" species will glow equally. Factors include age, oxidation, sunlight exposure (fades over months/years), moisture, and growth conditions. Heartwood usually reacts more than sapwood.
- **Testing Tips:** Use a strong blacklight in a dark room. Freshly sand the surface. Distinguish true fluorescence (glowing emission) from surface reflection. Some woods show stronger effects in alcohol/water extracts (shavings in a vial).
- **Why It Happens:** Likely tied to phenolic compounds or flavonoids (plant defense chemicals against UV, herbivores, etc.). It's a byproduct rather than a primary adaptation for wood, which is usually hidden under bark.
- **Applications:** Wood identification (a "secret weapon" for distinguishing species), artistic/turning projects (bowls, pens, inlays that glow dramatically), and educational demos in natural history or forestry. Finishes may not block it entirely, but oxidation over time can.
- **Edge Cases:** Some fluorescence appears only in mineral deposits, fungal stains, or specific growth rings. Tropical/exotic woods have more examples, but US natives provide plenty of options locally. Lists are not exhaustive—amateur observations (e.g., via Google Sheets or forums) continue to expand them.

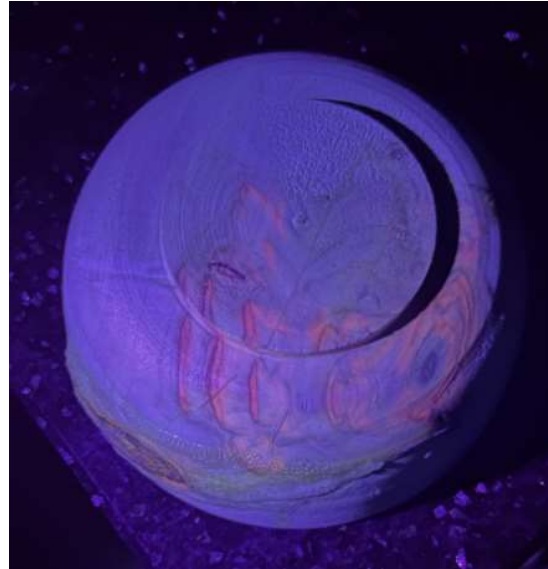
For a comprehensive reference, the Wood Database article on fluorescence is excellent, with a table of many species (filter for North American ones).

On the Open House turning on July 11, John Mueller had brought in a Black Locust blank and mentioned that it fluoresces under UV light. He sent a little scrap piece home with me. I figured it was time to get my small UV flashlight out and see for myself at home. What follows are the samples I could find in my shop.

This is the scrap of Black Locust John gave me. Under UV light the wood fluoresces a uniform yellow. It is difficult to photograph, but the counter and sapwood is reflecting the UV light and is bluish/purple.



Here is a sample of Box Elder's red stains, and pink/red fluorescence under UV light. The purple is the reflected UV light as caught by the camera.

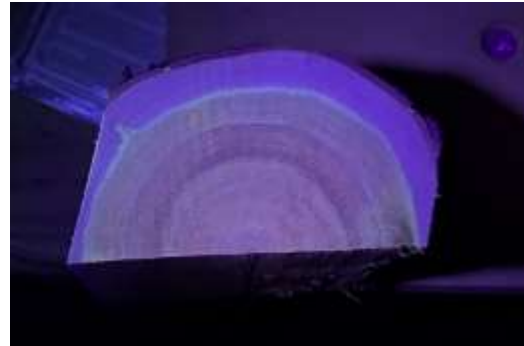


Here is an example of Buckthorn, the edges of its sapwood fluorescing yellow.

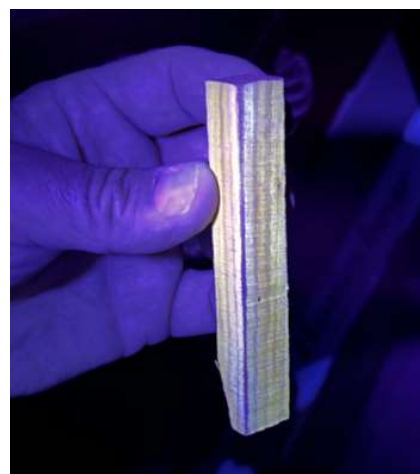




Another Black Locust sample. The purple is the reflected UV light on the sapwood. The Yellow is the fluorescence in the grain of the heartwood. This is a sample from Mary Buckley's donation.



Another Buckthorn sample. The purple is the reflected UV light, but the sapwood/heartwood boundary fluoresces yellow.



An Osage Orange sample. The wood doesn't reflect the UV light, it fluoresces yellow.