



# Western Juniper vs. Cedar, Redwood, and Tropical Hardwoods

## JUNIPER: A MORE DURABLE ALTERNATIVE

Juniper is rapidly emerging as a popular exterior and interior wood product because of its beauty, affordability, and natural durability. This durability is remarkable: Scientists have discovered that western juniper outlasts today's redwood and cedar products by many years. One study, by Oregon State University researcher Jeff Morrell, directly shows the service life of juniper versus other durable species including Western red cedar, redwood, and many others. This study, called *Service Life of Treated and Untreated Fence Posts: 1996 Post Farm Report*, directly compared western juniper with second- and third-growth cedar and redwood in ground contact situations. The findings demonstrate that **juniper with a balanced amount of heartwood and sapwood outlasts second growth western red cedar and redwood by many years.**

*This table, borrowed from the study, shows that juniper posts are expected to last for at least 56 year in the damp climate of Western Oregon:*

Average age at failure (yr)		
	Years to failure	Still being Tested for
Juniper, western	-	<b>56</b>
Red cedar, western	<b>23</b>	-
Redwood	<b>21</b>	-

## BACKGROUND

Redwood and cedar are well-known for their rot-resistance and durability as decking, siding, fencing and earthwork products. This reputation was earned when exterior products were being cut from old growth trees, which developed over many centuries the aromatic natural oils and tannins that fend off fungus and rot. Unfortunately, the redwood and cedar products on the market today are cut from young second-and third-growth stands and have not had the same amount of time to develop the rot-resistant oils. Even though many of us still think redwood and cedars have those legendary exterior properties, they don't!

The Forest Products Society reports, in *Natural Decay Resistance of the Heartwood of Coast Redwood*, that second- and third-growth redwood trees can be five times less rot-resistant than their old-growth predecessors. This means that redwood products that are estimated to last for 30 years will actually decay much faster. Today's juniper products will outlast cedar and redwood by many years.

## **JUNIPER VERSUS TROPICAL HARDWOODS: COMPARABLE PERFORMANCE**

Jeff Morrell also led a study in very wet and warm Hilo, Hawaii, titled *Resistance of Selected Wood-Based Materials to Fungal and Termite Attack in Non-Soil Contact Exposures*. This study was modeled on a common test for decking products and measured the fungal decay of western juniper compared to merbau and ipe in non-ground contact applications. The study found that **western juniper heartwood samples were nearly as decay resistant as ipe and merbau.**

Juniper samples with a mix of heartwood and sapwood were only slight less decay-resistant than western juniper with all heartwood. This study shows that juniper products are a long-lasting local alternative to irresponsibly logged rainforest species like ipe and merbau.

## **JUNIPER: SUPERIOR DENSITY**

In addition to its exceptional decay resistance, juniper is also denser than redwood and western red cedar. This means that it holds up to garden tools, animal scratching and other wear and tear better and longer.

The Janka scale is the most widely accepted scale for measuring the density or hardness of wood. According to Lumberjocks.com, here are the results when comparing juniper to redwood and western red cedar.

<b>Janka rating</b>	
Western Juniper	600
Western Red Cedar	350
Old-growth Redwood	480
Second-growth Redwood	420