

New Zealand Native Woods for Guitar Making

Over the years I have been contacted by many people interested in learning about the qualities of various native woods in relation to guitar making. These enquiries have prompted me to take some time out to reflect on the history, uses, qualities and properties of the woods I use. I hope you find this information useful and interesting. A photograph of each native tree is shown, along with an accompanying Singing Wood guitar crafted with each wood. Cheers – Ian.

I am a great admirer of the abundance and diversity of New Zealand's flora and fauna. It is a great joy to experience a walk through our native forests. The majority of woods I use have been recycled and/or sustainably sourced. I have even used woods from my own back yard and local environment. Examples being Kowhai, Houhere (Lacebark) and Ake ake – some being trees that have been damaged by wind or have died.

New Zealand has many species of woods that may be suitable as tone woods for guitar making. I have experimented with many myself, and other woods I have found difficult to obtain, to ascertain their properties.

KAURI – AGATHIS AUSTRALIS

Kauri – the mighty giant of New Zealand's native forest, savagely plundered around the 1800s-early 1900s.

I mainly use it for sound boards but have also made a few sides and backs with heartwood, to some success, as it looks great finished, with a lovely colour and luster. As a soundboard tone wood, it is just beautiful, especially in the mid-range. If selecting this wood for a soundboard, look for sapwood, as heartwood is too dense and heavy.

Heart wood is a light brown (biscuit) colour with lighter similar-coloured sapwood. The timber is straight in the grain, strong and easily worked; almost completely free from knots. Kauri was in great demand for house building, boat building and cabinet making. It is regarded as one of the finest, most long lasting boat building woods in the world. It is now hard to come by in any quantity, but still around, as recycled wood, mostly from old demolished buildings, and the odd privately owned tree. For some years now, great logs have been dug out from Northland swamps of an age up to 30,000 years old. This swamp wood is mostly in perfect condition and is darker in colour. I have made one guitar (sides and back) using this lovely old swamp wood. Heart wood Kauri is also very good for necks; it is clean, straight grained and strong.

As an electric guitar, Kauri makes a wonderful sounding and looking instrument that is very pleasing to plane, carve and shape, for that special model.



KAHIKATEA – PODOCARPUS DACRYDIOIDES

Kahikatea is the tallest native tree in New Zealand: 80-120 feet high, with a trunk of 2-5 feet in diameter. It is a lowland forest tree and used to be very abundant, forming the largest stands of pure species of timber. Kahikatea is only suitable as a sound board and for sound board bracing. I use this wood more than any other native wood, for sound board and sound board bracing; it sounds wonderful, with a unique tone (for a comparison: is it stiffer than Western red cedar and a little lighter in density than Spruce).

Kahikatea is light with surprising longitudinal stiffness. It is white to yellow in colour; the sapwood which comprises the greater part of the log is white and the harder heart wood is yellow. The timber is straight in its grain, easily worked, and long, clean lengths could be obtained in the past. Unfortunately this is not the case today, as the forests have been largely felled. Only on the West Coast of the South Island can one find large forests; just dotted trees or pockets of forests elsewhere remain. I don't have too much difficulty in obtaining suitable pieces of this wood.

Kahikatea has been used for boat building, joinery, woodenware such as casks, chopping boards and wooden spoons, due to its low toxicity.

As a tone wood, depending on the tap tone and density, it can produce a very bottom-endy bass and bright, clear mid-range and tops.

If you get it right, a powerful, dynamic and beautiful tone can be found in this lovely wood.

As an electric guitar – don't even consider it – the wood is too light.



TOTARA – PODOCARPUS TOTARA

Totara is a medium to large tree which grows slowly to 40-100 feet high; it's a forest tree noted for its longevity and great girth of trunk. Totara is prized for its carving properties, and was the primary wood used in Māori carving and hollowed out logs for waka (canoes).

I use this beautiful wood mostly for sides, backs and necks and have had much success. Totara has a very decorative grain, resulting in some beautiful book-matching. The sapwood is a cream colour, darkening to rich red heartwood. It is straight grained and very resistant to rot. Due to its durability Totara was often used for fence posts, floor pilings and railway sleepers. Totara carries a strong resinous quality that has a tendency to clog up sand paper. Drying is also a problem when an oil varnish is used. It is, however, OK with a lacquer finish. The look of a nicely finished guitar in Totara is stunning – producing a nice, rounded tone.

I have not crafted an electric guitar with Totara, but I have no doubt that it would produce a wonderful sounding and looking instrument. A magic carving wood for a special guitar.



RIMU – DACRYDIUM CUPRESSIUM

Rimu is a tall forest tree – 60-100 feet high and a trunk 2-5 feet in diameter. It is a slow growing tree found throughout New Zealand. The largest concentration of trees is now found on the West Coast of the South Island. I drive past a number of Rimu trees every time I go into town (Dunedin); it always gives me joy. In the 19th and 20th Centuries, Kauri and Rimu were the principal indigenous timber trees; making a substantial contribution to New Zealand's timber needs. Nowadays treated Pinus Radiata has replaced these native woods as our principal house-building wood. My own coastal cottage is completely constructed with Rimu, built in 1950.

I use this very decorative wood for sides, backs and necks. I don't think it is suitable for a sound board, due to its heaviness, but maybe some selected sapwood could prove me wrong.

Rimu is strong, hard and heavy; often twisted and very decorative in the grain. The colour is brown to red, with darker and lighter streaks in the heart. Rimu was used extensively for house-building joinery, furniture and cabinet making.

Rimu produces a lovely tone. The finished Rimu guitar is a real beauty, especially with some careful selection and book-matching. I have used Rimu for an electric guitar, with much success: it sounds and looks great!



TAWHAI (NEW ZEALAND BEECH) - NOTHOFAGUS

The Beech forests are the largest native forests remaining in New Zealand. A tall, magnificent evergreen forest tree - 60-100 feet high. Many were spared being cut down because the land they grow on is often steep and mountainous. There are five different types of Tawhai (Beech) which make up New Zealand's Beech forests: Red, Silver, Black, Hard and Mountain. Silver Beech is the most common.

I use Silver and Red Beech and would use the others if I could obtain them. The wood produces a wonderful sounding guitar and has a fine resonance. It is only suitable for sides, backs and necks. The timber is dense, hard and heavy, with often a curly, attractive grain. Beech can be prone to splitting, so some care in wood selection is necessary. I regard Tawhai as the best sounding body wood that I use; I have a good stack of Silver and Red Beech for many future instruments.

Tawhai - a very suitable wood - makes a fine sounding and looking electric guitar.



KOWHAI – LEGUMINOSAE

A small, slow growing tree, 20-40 feet high that grows in patches in the forest. One sees it growing just about everywhere – it has a bright yellow flower that is loved for its nectar, by New Zealand native birds, especially the Tui and Bellbird. My cottage is called Kowhai Cottage – after the splendid Kowhai that grow all around my property. This area of Otago is still quite abundant in these lovely trees.

Due to the extreme hardness and weight of Kowhai, I use it for fret boards, bridges, bindings and decorative pieces. The wood is heavy and very hard. The sapwood is cream in colour, light brown to dark brown in the heart. It was used as fence posts, stakes, axe and tool handles.

The wood is highly decorative and suitable for cabinet work. Unfortunately Kowhai has a toxic, strong smelling dust and one needs to be careful when working with this wood. I have used Kowhai as necks; it makes a wonderful strong neck, but is a bit on the heavy side, especially as I have moved away from truss rods for years now, preferring to use a solid steel bar as neck reinforcement. I have found that a heavy, dense guitar neck makes the instrument sound better in every way, other than the bass response.

As an electric guitar it would be a back-breaker: sound good but just too heavy.



MATAI – PODOCARPUS SPICATUS

Matai is a tall, round headed forest tree – 40-80 feet high. It is found all over New Zealand, from sea level to 2,000 feet. The wood is brown in colour, hard and heavy, of great strength and durability. The sap was used by bush men to make pine beer. As with Rimu and other big forest trees, it has been largely felled. The wood was used mostly as tongue and groove flooring and firewood.

I use Matai mostly for necks as it is very strong for its weight, with a straight, even grain. Matai also works really well for sides and backs – it produces a great tone - similar to Tawhai (Beech), due to its hardness.

As an electric guitar it would work great.



HOUHERE – (LACEBARK/RIBBONWOOD) – HOHERIA POPULNEA

A graceful, handsome, poplar-like tree – 15-25 feet high – the Houhere genus consists of five species which grows all over New Zealand, including in lots of urban backyards as a decorative tree. The wood was used for paper making.

Houhere is a light, soft wood; a cream colour with decorative, sometimes swirly dark streaks, making a lovely looking instrument. Houhere makes a wonderful sounding guitar – unique and beautiful. The tone is unlike any other – I can describe it as rounded and bottom-endy, with mellow mids and highs. Houhere has an unwanted tendency to move around a lot with changing humidity. One needs to ensure low humidity in storage and construction – of no more than 45% before gluing on the braces.

The heartwood would be an interesting prospect for an electric guitar – it would certainly look good.



KOHEKOHE – DYSOXYLUM SPECTABILE - MELIACEAE (MAHOGANY FAMILY)

Kohekohe is a handsome, round-headed medium sized tree – 30-50 feet high. Kohekohe was used for furniture making and for Māori waka (canoes). These trees are found only in the North Island of New Zealand and in the top of the South Island.

The wood is bright reddish in colour, of low density and rather soft but tough. It's very decorative and easily worked. I demolished my kitchen some years ago and discovered all the cupboard shelving under the paint was kohekohe. Consequently I have made a few sides and backs of guitars with this beautiful looking wood. It is lovely to work with and produces a fine tone. I wish I could get more of this wonderful wood.

I am sure Kohekohe would make a fine sounding and looking electric guitar.

