

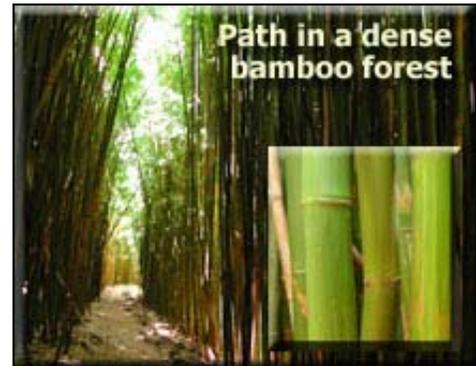
About Bamboo, the Giant Grass

Bamboo forest ecosystem. A dense, evergreen bamboo forest is a peaceful and magical place. As the wind bends the flexible bamboo, the poles clack and the leaves whisper. Bamboo has inspired human beings for millenia.



The fastest growing plant. Bamboo is not a tree, it is a giant grass. Some species grow four feet in one day! Bamboo reaches full height in one growth spurt of about two months. When bamboo is harvested, the root system is unharmed and healthy, ready to produce more shoots, just like a grass lawn.

1500 varieties. Bamboo grows naturally in the tropical world extending to temperate climates. Running bamboo spreads underground and pops up like a weed. Clumping bamboo is preferred because it remains in the area it is planted. **5000 uses.** For thousands of years, bamboo has benefited people in Asia, Africa, South America: building materials with the strength of steel, furniture, weapons (first rocket was a bamboo tube stuffed with gunpowder), writing and musical instruments, fuel, food, medical products.



Bamboo for building. Some grows so large it is called timber bamboo- 120 feet high and 13" diameter. Thick bamboo poles are 2-3 times stronger than comparable size of wood timber. Bamboo can be harvested in 7 years versus 10-50 years for softwoods and hardwoods, yielding up to 20 times more than wood. One bamboo clump can produce 200 poles in the five years it takes one tree to reach maturity. Bamboo can be sustainably harvested and replenished with virtually no impact to the environment.



Grow your own home. It's a renewable resource for housing, flooring, paneling, fencing and more. In the tropics, it's possible to grow your own home. In Costa Rica, 1000 bamboo houses have been built annually from a 60 hectare (150 acre) plantation.



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Bamboo's Role in Environmental Restoration

Our biosphere is suffering from resource depletion, habitat loss, species extinction and ecosystem pollution, suggesting sustainability is not enough. Architects and developers can now choose materials and systems that have a restorative effect on the environment. Bamboo can play a key role.

Bamboo is the fastest growing plant. It produces greater biomass and 30% more oxygen than a hardwood forest on the same area, while improving watersheds, preventing erosion, restoring soil, providing sweet edible shoots and removing toxins from contaminated soil. Bamboo produces structural beams, flooring, wall paneling, fencing and many more sustainable by-products of environmental restoration.



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It takes an acre of trees to build the average American home

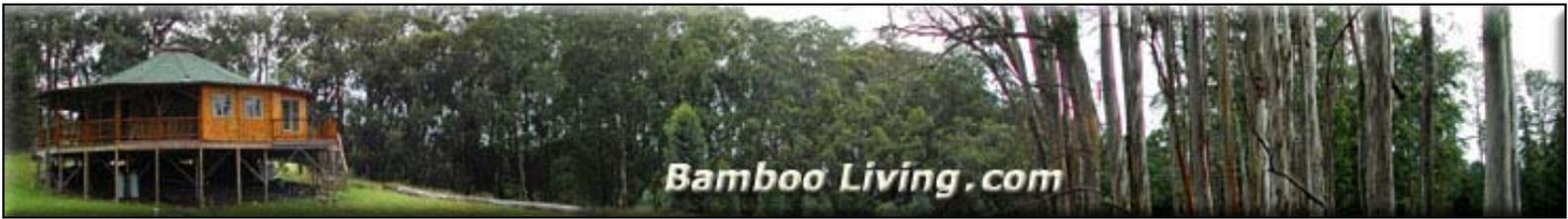
Or, the size of the house itself built in bamboo because bamboo grows so fast and so dense

Bamboo timber can be harvested every year after 7 years, compared to 30 to 50 years for trees. With 10-30% annual increase in biomass versus 2-5% for trees, bamboo can yield 20 times more timber than trees on the same area. Bamboo can be selectively harvested annually and regenerates without replanting.

Bamboo generates 30% more oxygen than trees. It helps reduce carbon dioxide gases blamed for global warming. Some bamboo sequesters up to 12 tons of carbon dioxide per hectare, which makes it an efficient replenisher of fresh air.

Bamboo is a natural water control barrier. Because of its wide spread root system and large canopy, bamboo greatly reduces rain run off, prevents massive soil erosion and keeps twice as much water in the watershed. Bamboo helps mitigate water pollution due to its high nitrogen consumption, making it a solution for excess nutrient uptake of waste water from manufacturing, livestock farming and sewage treatment.

Bamboo can restore degraded lands. It is a pioneering plant and can be grown in soil damaged by overgrazing and poor agriculture. Proper harvesting does not kill the bamboo plant, so topsoil is held in place. Because of its dense litter on the forest floor it feeds topsoil, restoring healthy agricultural lands for generations to come.



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Growing and Harvesting Bamboo in Vietnam



Vietnam has an estimated 200,000 square miles of bamboo forests.

After Vietnam was defoliated by Agent Orange in the American War, bamboo was the first species to begin regenerating the forests.

Today, villagers in 29 provinces grow bamboo for domestic and export products.

An important bamboo for construction timber is *bambusa stenostachya*, or "tre gai", a clumping bamboo. Much of the tre gai bamboo comes from villages in Central Vietnam.

The tops of tre gai bamboo are used by chopstick factories, and the long, thick bottom poles usually ended up as scrap. Now Bamboo Technologies uses these sturdy, hard poles (10-14' long, 3"-4" diameter) to build houses.



Tre Gai Poles

Bamboo growth cycle

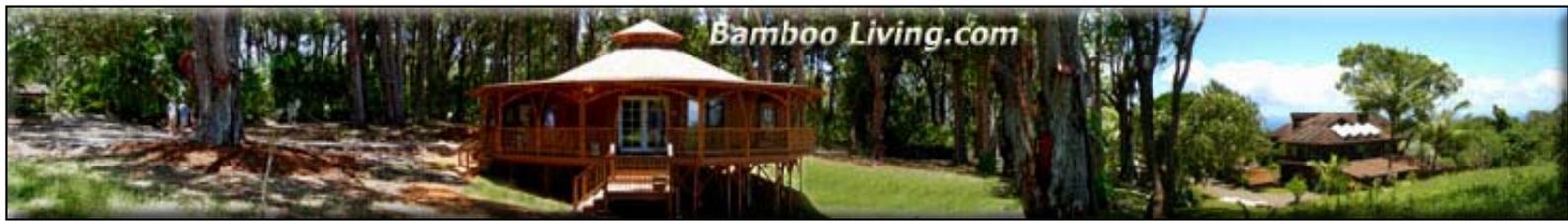
New bamboo clumps mature enough to grow full size poles in about three years. In one three month spurt bamboo shoots reach full diameter and height, more than 60 feet high. In three years poles mature into dense, hard bamboo.

Harvesting bamboo at maturity is the critical first step to insure strong and durable quality poles. When bamboo poles reach peak strength and hardness, villagers in Central Vietnam harvest them. Bamboo clumps will grow new shoots for as many as 75 years.



Tre Gai Bamboo Grove

[Next >> Harvesting Bamboo in Central Vietnam](#)



Growing Bamboo in Maui

A promising new agricultural enterprise. Hawaii's sugar cane and pineapple industries are contracting, and the state is searching for new crops. Bamboo is an environmentally sound replacement to help preserve Hawaii's agricultural heritage.



Bamboo Greenhouse, Shadehouse and Nursery

Bamboo research centers and plantations are sprouting up in the Hawaiian Islands, especially on Oahu, Kauai and the Big Island. Already popular for fencing, flooring and furniture, now there is growing demand for bamboo timber for houses. To read more about this trend, see [Honolulu Magazine "Bamboo Boom?"](#)



Whispering Winds Bamboo Farm (www.whisperingwindsbamboo.com) in Kipahulu, Maui, is part of a tropical hardwood reforestation project. The greenhouse, shadehouse and nursery propagate over 50 species of bamboo, including ornamental, timber and edible bamboo. Growers research which ones grow best in various ecological conditions.



Bamboo Plantation in Kipahulu, Maui

The plantation has five acres, about 600 plants, interplanted with nitrogen fixing trees. Twenty acres are projected by the end of 2005. Products are nursery stock, edible shoots, ornamental bamboo and timber bamboo poles.

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