

Sandalwood: Current Interest and Activity by the Hawaii Division of Forestry and Wildlife¹

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Abstract: The State of Hawaii Department of Land & Natural Resources (DLNR) protects native species growing on State land, but has no official program funding for growing sandalwood. Part of the DLNR, the Division of Forestry and Wildlife forest and nursery managers maintain exuberant activity in attempting to establish their nursery stock of sandalwood in the field out of personal interest. Nursery and planting techniques are described.

In 1936, when Hawaii was a territory of the United States, Charles S. Judd, the Territorial Forester at the time, made headline news in the Honolulu Star-Bulletin by proclaiming "SANDALWOOD, ONCE THE GOLD MINE OF HAWAII, IS COMING BACK"! Today, sandalwood is found in scattered abundance in Hawaii, but maybe not to the extent that "gold diggers" would prefer.

This symposium came about because of reports in 1988 that the "last remaining" sandalwood forests in Hawai'i were being cut. This caused a furor locally and put the State's Department of Land & Natural Resources, specifically the Division of Forestry and Wildlife (DOFAW), into the limelight. The Department publicly stated that "there are no statutes, rules or regulations which specifically address the cutting of Sandalwood as a species," and "harvesting that is occurring ... is on private land zoned agriculture. As such, the activity is not within our jurisdiction." (Paty 1988).

DOFAW conducts natural resource inventories of Hawaii about every 10 years, and currently is in the middle of the federally funded Multi Resource Inventory. The islands of Moloka'i, Kaua'i, and O'ahu are finished, and Maui and the Big Island of Hawai'i are still awaiting survey. Because these inventories are taken at the plot level and because of statistical filters, *Santalum* spp. has rated only a passing mention from the 1960's inventory in (Nelson and Wheeler 1963, p. 32):

Noncommercial tree species: Tree species not now considered suitable for industrial products. The following were tallied on plots:*Santalum* spp., 'ili-ahi (sandalwood)....

DOFAW is made up of managers of the state's natural resources; it does not include research scientists. Without funded programs, any work being done on *Santalum* spp. is at the county or district level and stems from a personal interest by the resource managers. The following is what these district foresters have discovered in trying to germinate *Santalum* spp. seeds in the nursery and plant the seedlings in the wild.

NURSERY ACTIVITIES

On Maui a well drained and loamy/sandy nursery medium works best: 1/4 peat, 1/4 vermiculite, 1/2 cinder (fine cinder from Kula Forest Reserve on the slopes of the dormant volcano Haleakala on Maui).

As host species, nitrogen-fixing leguminous species are best, with koa (*Acacia koa*) being the best of all. Other species used are ironwood (*Casuarina* spp.), mamane (*Sophora chrysophylla*), mock orange (*Murraya paniculata*), 'a'ali'i (*Dodonaea viscosa*), and wild pea weed (*Macroptilium lathyroides*).

Stem's Miracle-Gro, a commercial all-purpose fertilizer, is used.

Germination has been excellent in the nursery for the native Hawaiian species: *Santalum freycinctianum*, *S. haleakalae*, *S. ellipticum*, and *S. paniculatum*.

PLANTING ACTIVITIES

In the arboretum next to the DOFAW's Hilo office on the island of Hawaii, the seedlings have been planted with tubes above ground to serve as protection against weed eaters or mowers. Survival has been excellent here.

Santalum haleakalae seedlings have been outplanted on Maui, but none has survived past the seedling stage.

On August 7, 1989, DOFAW and the Outdoor Committee of the Hilo Women's Club planted 50 *Santalum pilgeri* on Pu'u Huluhulu (a cinder cone just off the Saddle Road on the Island of Hawaii) at about 6000 feet elevation. On November 13, 1989, 34 of the seedlings were alive and healthy. A visit to the site in Spring 1990 revealed that about one third to one half of the original 50 survived.

REFERENCES

- Nelson, R.E.; Wheeler, P. R. 1963. Forest Resources of Hawaii—1961. Honolulu: Division of Forestry and Wildlife, Department of Land & Natural Resources.
- Paty, W. 1988. [Letter to Honorable Virginia Isbell, State Representative, State of Hawaii]. Located at: Department of Land & Natural Resources, Hawaii.

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