

## **HFIA Presentation Mid to Low Elevation Christmas Tree Demonstration Project Grower Meeting**

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### **Humu'ula Douglas Fir Plantings Update**

In 2014, 2015, 2016, and 2017 Douglas fir, Grand fir, and Noble fir seedlings were planted in Humu'ula/Pi'ihonua at 6,000' elevation on Hawai'i downslope of Mana Road on Department of Hawaiian Home Lands (DHHL) land. The Grand and Noble fir did not grow well; only the Douglas fir survived.

Due to poor weather conditions, the area planted in 2014-2016 has been inaccessible for monitoring or maintenance. A year ago, a small number of the Douglas fir that survived were about five feet tall. The majority of the trees were smaller, and many were replants. This first site contained six different seed sources of Douglas fir. The seed sources from Capellas and Cloverdale had the best survival, and were also the sources that are still surviving in the 2012 Block B planting. We are hoping that those in the 2012 planting will seed.



In 2017, we planted 600 seedlings in Block B, which is mauka of Mana Road. These trees are growing slowly and have recently been weeded. Fertilizing and inoculating of the seedlings is planned and should help them to grow faster. Some of the issues there are birds, pigs, and weed control. The tallest seedlings observed in September 2018 were about a foot tall, however there was some needle tip browning. This browning of the Douglas fir needle tips was also observed on the 2012 plantings. The Douglas fir is sensitive to vog, so hopefully we will not have too many problems with that for a while.

### **Mid to Low Elevation Christmas Tree Demonstration Project Grower Meeting Update**

The Mid to Low Elevation Christmas Tree Demonstration Project is a 2-year project that will run through December 2019. A Grower Meeting will be held in 2019 in which we will provide preliminary project results. Final project results will be posted on the project webpage in January 2020.

Although Douglas Fir, Grand fir, Fraser fir, and other mainland firs are favored species for Christmas trees in Hawai'i, they are all imported. Douglas fir has been successfully grown on an experimental basis, but is not yet ready for "prime time". Much work needs to be done on selection of seed sources suitable for Hawaii locations, and areas suitable are usually at elevations above 5,000 to 6,000 ft.

Because the average landowner is at elevations below 4,000 feet, we are looking at other species that may be useful for import replacement. There are already many conifers being grown in Hawai'i, as ornamentals, shade trees, windbreak trees, and shelterbelts. (Many species are propagated by the Waimea/DOFAW nursery in Kamuela and are available to order. See their [web site](#).)

During the holidays, I had observed that many potted table top trees were brought in. Some of these were Italian Stone Pine (*Pinus pinea*), Scotch Pine (*Pinus sylvestris*), Ponderosa Pine (*Pinus ponderosa*), and others. In 2010, I started experimenting with Italian Stone Pine and Scotch Pine and found that the

Italian Stone Pines were easy to grow from seed. KTA was receptive to selling these, and did sell whatever I brought to them.

I think that any of the species that can be successfully germinated or propagated and grown in Hawai'i is a potential potted Christmas tree. These could be used as table top trees which are small, and then be up-potted into larger pots and used as living trees, or planted in the ground for later harvest. (Care should be taken to not cut the apical growth of potted trees, if they are intended for growing out later).

With the movement of "buying local" and import replacement to avoid bringing in unwanted invasive species, we started looking at what other trees might be available locally to serve as Christmas trees.

**Trees commonly used:**

Norfolk Island or Cook Island pine (*Araucaria spp.*)

Mexican or Portuguese cypress (*Cupressus lusitanica*)

Monterey cypress (*Cupressus macrocarpa*)

Monterey pine (*Pinus radiata*)

Leyland cypress (*x Cupressocyparis leylandii*)

Sugi/Japanese Red cedar (*Cryptomeria japonica*). was also used, but can be prickly.

**Other potential species for cut trees – These have been successful in the nursery and in pots:**

Himalayan cedar/Deodar cedar – *Cedrus Deodara*.

China fir – *Cunninghamia lanceolata*

American arborvitae – *Thuja occidentalis*

Western Red Cedar – *Thuja plicata*

Arizona Cypress or Boulevard cypress – *Cupressus arizonica*

Leyland cypress – cross of *Cupressocyparis leylandii*. These are propagated vegetatively.

Hinoki Cypress – *Chamaecyparis obtuse*

Eastern Red Cedar – *Juniperus virginiana*

Incense cedar – *Calocedrus decurrens*

Chinese Juniper - *Juniperus chinensis* – tends to be prickly.

**Things to consider when selecting what to grow:**

- Seed source – form of trees may vary with seed sources, and they may be acclimated to different areas. Certain selections are for timber, while others may be for ornamental or landscape plantings.
- Site where plants will be planted.
- Species requirements.
- Most conifers are able to grow within a range of zones.
- Some species are suitable as potted trees when young; however when planted out and become older, the form may change, and/or needles get longer.

**Problems that may arise if growing from seed:**

- Birds
- Rats
- Insects
- Disease
- Poor germination or no germination

- Insufficient stratification
- High humidity
- Different environmental requirements with different species.

**DOFAW Plants – Check With Jacob Witcraft at Waimea DOFAW Nursery:**

Araucaria columnaris – Norfolk Island pine

Cryptomeria japonica – Sugi or Japanese Red cedar

Cupressus lusitanica – Mexican cypress

Cupressus macrocarpa – Monterey cypress

Cupressus sempervirens – Italian cypress. (Too skinny)

Pinus elliotii – Slash pine

Pinus radiata – Monterey pine

Links

[DOFAW Nursery Species List](#)

[‘Āina Mauna Christmas Tree Demonstration Project](#)

[Hawaii Export Nursery Association](#)

Landowner Assistance Programs: <http://dlnr.hawaii.gov/forestry/lap/>



Giant Sequoia – potted from Kamuela Nursery