

Albizia in East Hawaii

Roadside Hazards



Kauai residents would tell you that the most stressful time came immediately after the hurricane when all communication was lost and people were restricted to their immediate neighborhoods by the downed poles and trees. They simply did not know if they were going to get any help or if the other islands had been as badly hit...



Albizia Fast Facts:

- ◆ Kauai residents who had survived Hurricane Iwa (1982) all brought the same piece of survival gear with them to the shelters during Hurricane Iniki (1992): a chainsaw.
- ◆ An albizia can grow nearly an inch a day, and may reach 100 feet in ten years. The largest trees in East Hawaii are estimated at 150 ft. Trunks in Puna may be more than 48 inches in diameter. Albizia is arguably the fastest growing tree in the world.
- ◆ The wood develops quickly and is weak. Use in structural wood products is limited.
- ◆ During a February 2014 storm with gusts ranging from 30–47 mph, 14,000 residents lost power (Tribune-Herald, 2014)
- ◆ Albizia is the most commonly reported species falling on power lines and across roads in East Hawaii today (HELCO, 2014).
- ◆ Albizia grows best in sunny sites with disturbed soil. Bulldozed lots and roadsides are ideal. Streambanks may have similar characteristics.
- ◆ Albizia is a nitrogen fixer—it can make its own fertilizer. This helps it establish on young lava flows and outcompete native plants.

Black Sands Albizia Demonstration Project:

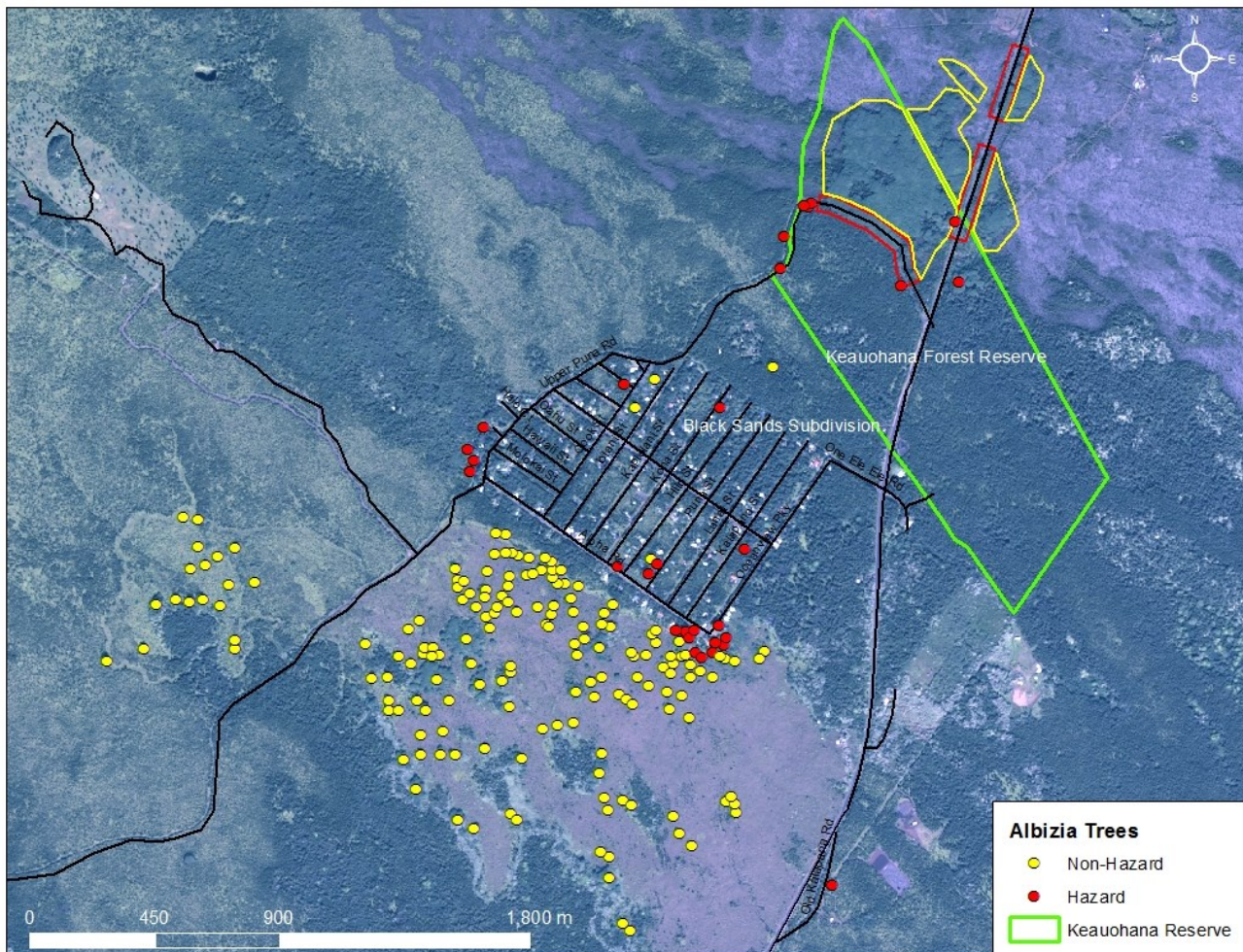
A 500 acre project to showcase the wide range of issues in albizia control, develop best management practices and empower community members to take the lead in albizia management in their neighborhoods.

The primary goal of the project is to identify barriers that have prevented agencies from removing the trees, and find solutions to life those barriers, and provide effective, long term control.



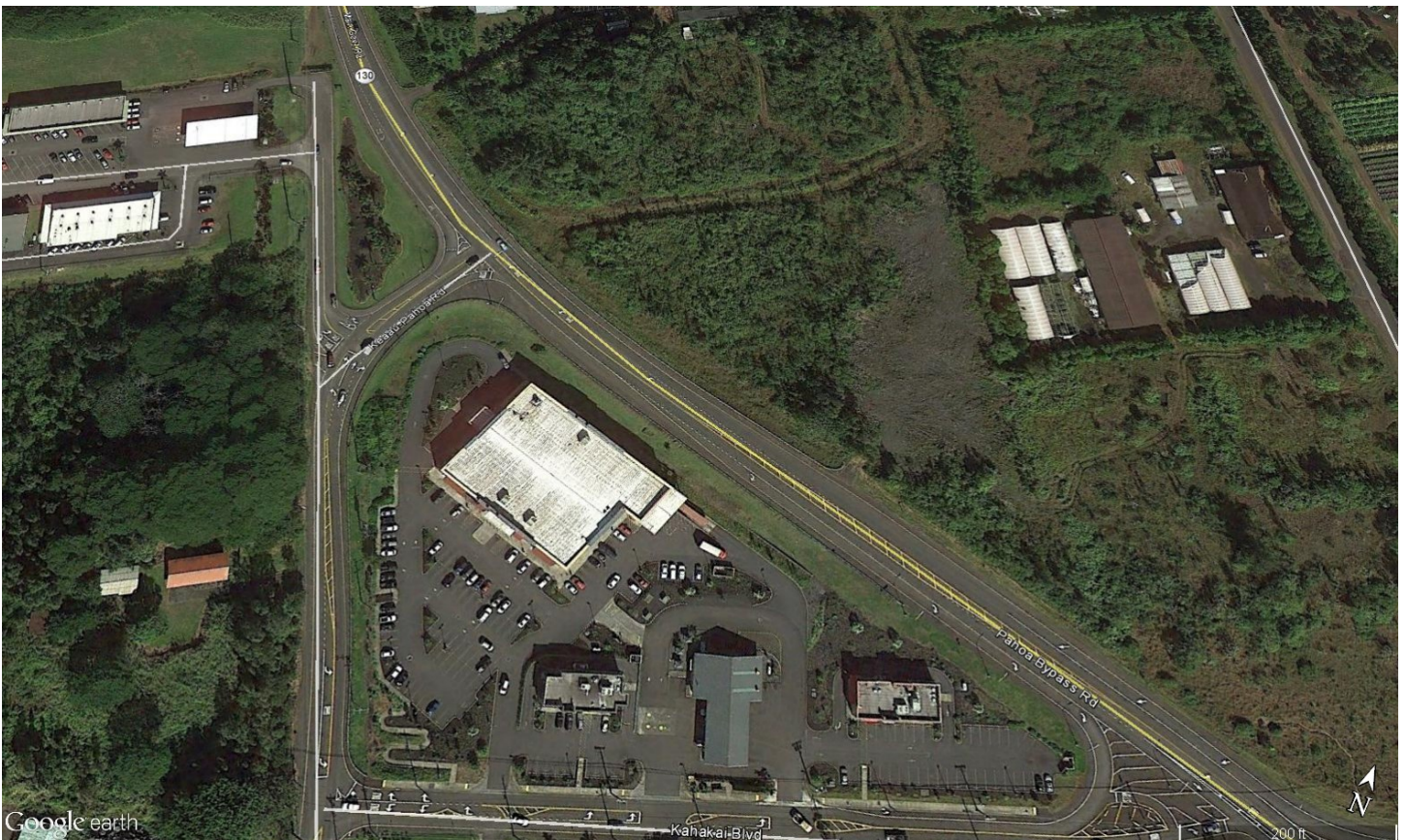
A secondary goal is to determine costs of control methods, and find ways to bring them down.

- ◆ Kauai: \$1 million per mile.
- ◆ Black Sands: \$104,700 for 1/2 mile, or \$210,000 per mile:
 - ◆ Hazard Tree Removal (440 trees): \$88,000 (HELCO, BIISC, DOFAW, County DPW)
 - ◆ Hazard Tree Trimming (100 trees): \$6,900 (HELCO)
 - ◆ Non-hazard tree removal (4000 trees): \$7,800 (BIISC)





The corner of Highways 130 and 132 is a critical control point. More than 8,000 house lots are found below this intersection. The cost of trimming for safety is estimated at \$60,000 per cut, repeated every 1-2 years. Permanent removal of all the hazard trees, and treatment of non-hazard trees should come to \$122,000.



Albizia Threat in East Hawaii:

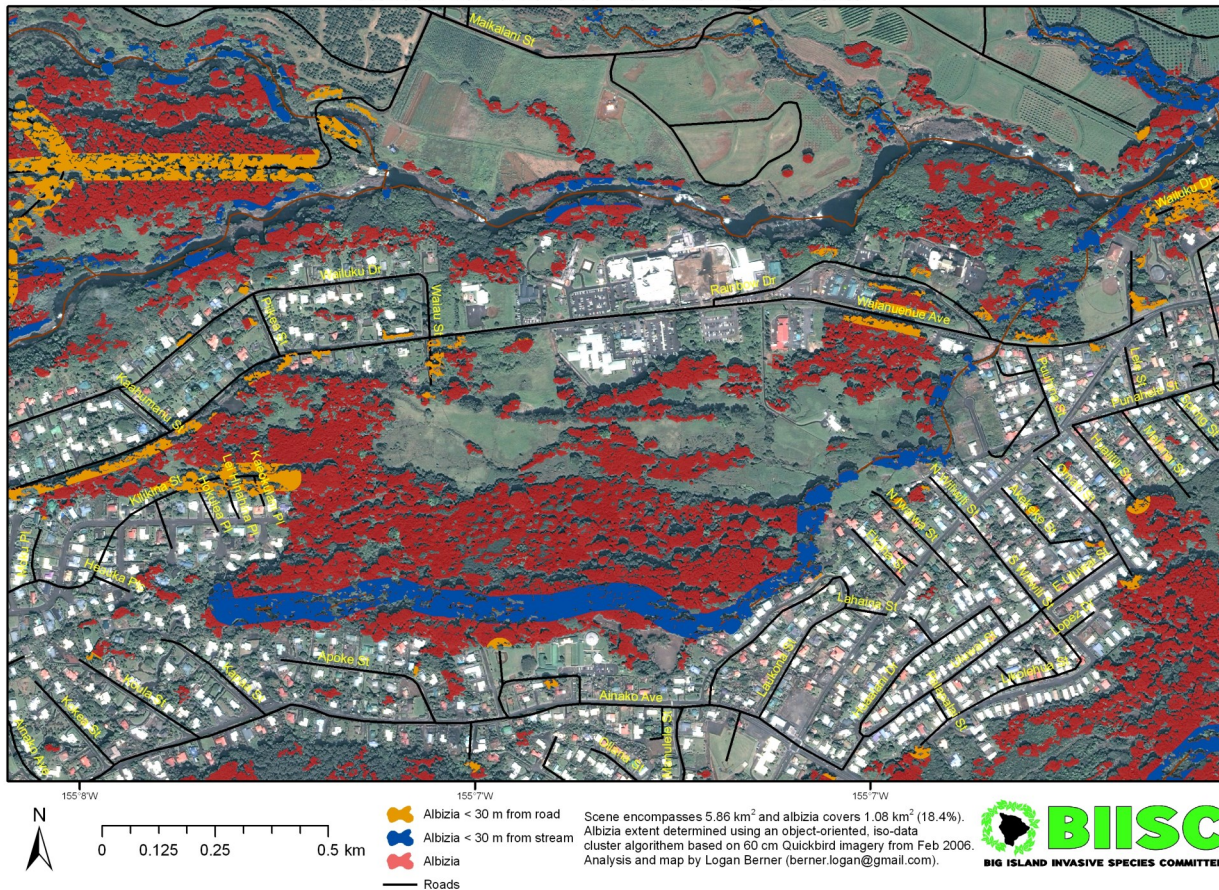
Albizia adds substantially to the uncertainty and risk of even the most well-planned Emergency Response. Explicitly adding albizia to the list of factors addressed in an Emergency Management Plan can improve prospects for removing the hazard trees proactively.

- ◆ Along 30 miles of roads used to access Hilo Medical Center, BIISC found 5 linear miles of albizia within 100 feet (striking distance) of the road.
- ◆ Removal cost will range between 1 and 5 Million dollars.
- ◆ There are more than 4,000 miles of primary and secondary roads on the Big Island. Most do not have albizia along them...yet.
- ◆ Albizia also line the road to the Hilo Airport, portions of Keaukaha, and the narrow road cut just north of the Wailuku Bridge.

"...trees nine years old had reached a height of over a hundred feet, a rapidity of growth almost unbelievable...the only objection to the tree is its short lived period, but as it is an abundant seeder, there should always be a good stand of this tree present."

-Joseph F. Rock, Botanist, 1920. Rock introduced albizia to Hawaii in 1917.

Potential Albizia Hazards Near Hilo Medical Center





Every car approaching Hilo Medical Center passes under these albizia trees—a critical control point for medical access. Estimated at 110 feet, they can easily fall across the road and power lines. HELCO contractors trimmed the trees back severely, and BIISC crews treated the trees farther from the road. Kuleana for the remaining trees is uncertain on this state owned property. Below, the same area from overhead.





Huge trees bordering the back side of E.B. DeSilva Elementary School are not along roads or power lines. But large trees have fallen on school property from the neighboring parcels. As pasture land, the neighboring properties could apply for NRCS funds to help defray the costs of removal. Above, 2013. Below, 2010.





Kaunamana School faces a similar threat from albizia bordering their property. A neighborhood group, the PACT, working with Dr. James Leary of UH Manoa CTAHR, began controlling albizia in the area. A large stand visible in 2010 (center, bottom) below, appears as a set of fine “skeletons” of trees above.

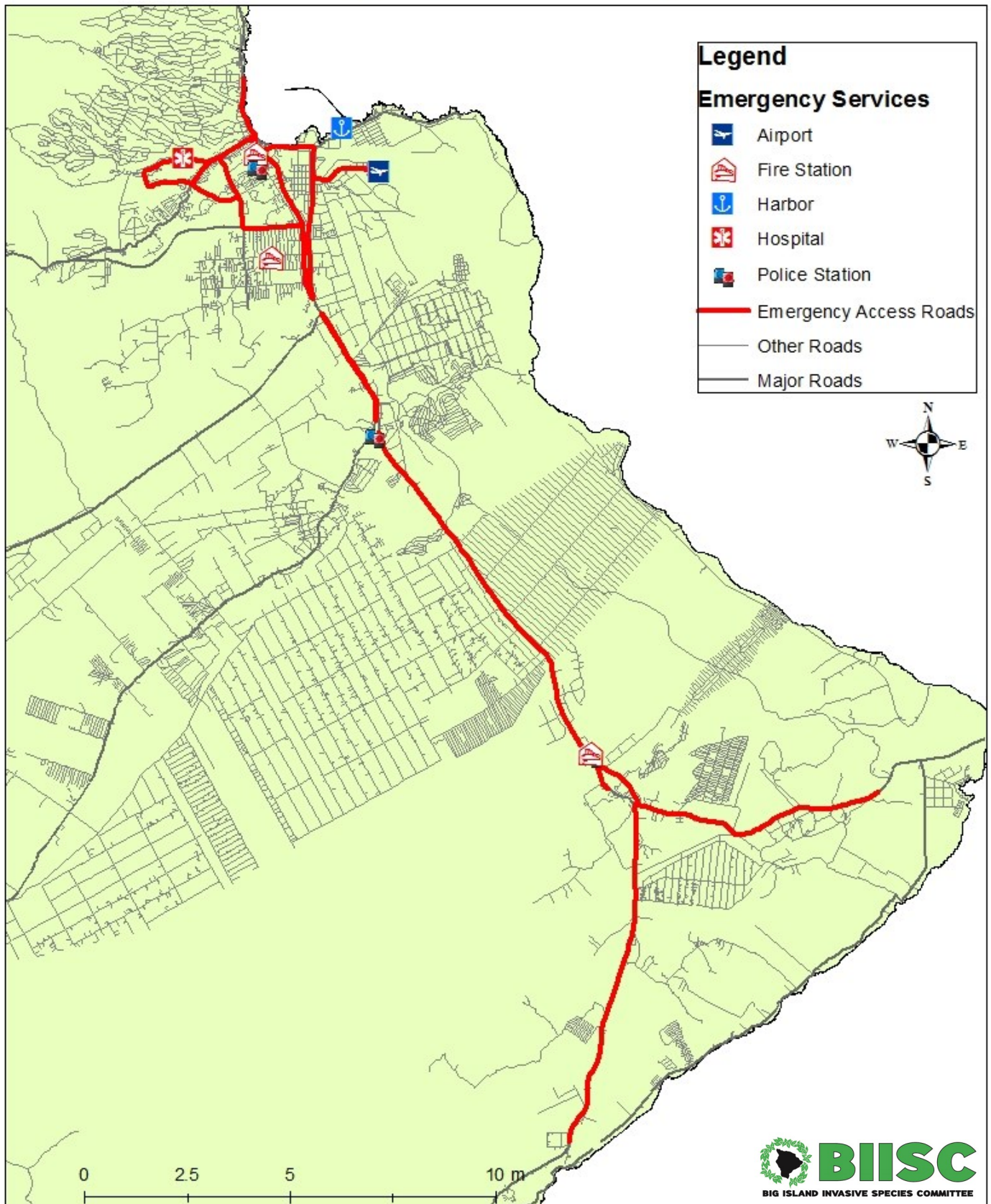




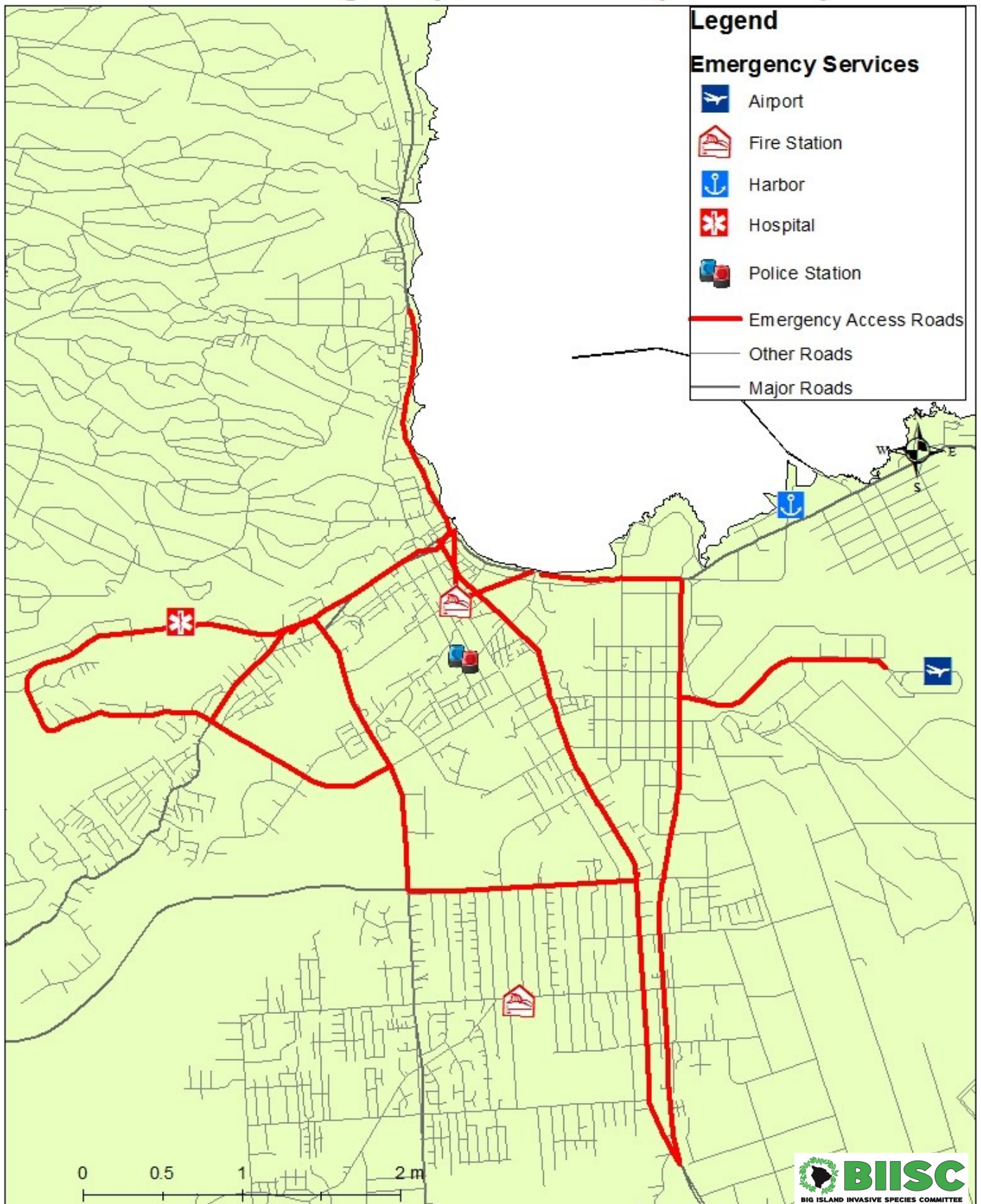
Puainako Extension was completed in 2004, just ten years ago. The trees on either side of the road were measured in March 2014 at 100 feet in height. Thin and brittle, they lean toward the road, many split apart during Tropical Storm Flossie. If left unmanaged, by 2024 these trees will be too tall to cut with standard lift trucks, and will form a solid tree tunnel, as seen in Nanawale . BIISC volunteers treated all the trees that were a safe distance from the road (1 acre). The work took one hour, with about 12 people.



Proposed East Hawaii Emergency Access Routes (Primary Roads)



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Managing albizia

What citizens can do:

- ◆ Leave natural vegetation untouched — don't bulldoze until you are ready to plant or landscape. Albizia grows rapidly in bulldozed areas.
- ◆ Weed out albizia seedlings and small trees before they become a problem. Control larger trees in safe areas.
- ◆ Deal responsibly with "hazard trees." Trees that pose a hazard should be removed professionally.



Methods of control:

- ◆ Conduct a risk assessment. For any trees near structures, contact an arborist for free consultation to determine the safest and most effective course of action to remove the tree. An arborist will help you determine when professional removal is necessary.
- ◆ Any tree that could fall on a road, power line, or building should be taken down by a certified arborist. After trees are cut, stumps must be treated with herbicide to prevent regrowth. Triclopyr (Garlon, Crossbow, Brush B Gone) is effective at 7–10% on cut stumps.
- ◆ Non-hazard trees in natural areas can be treated using **Milestone Specialty Herbicide**. Read and follow the Special Local Needs 24 (c) label for Hawaii.
- ◆ Make one angled cut every 6–10" around the tree using a hatchet or machete.



- ◆ Apply 0.5 to 1 mL (10–20 drops) of full strength herbicide into each cut. Use the larger dose for larger trees.
- ◆ That's it—the tree will quickly die and crumble over 2 years

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