

# Habitat Improvement Case Study: Boardwalk Rehabilitation on the Alaka'i Swamp Trail

## Kupu - Hawaii Youth Conservation Corps (Hawaii)

Habitat Improvement National Benefit Description: An important aspect of trail development is creating a positive experience for visitors while preserving the important natural resources that plants and animals depend on. In many RTP-funded projects, this process goes further in improving the habitat along the trail corridor. RTP funding is also commonly used for projects involving acquisition of land for habitat and ecological connectivity. Planning efforts may also focus on trail systems that guide visitors away from sensitive wildlife areas and into more adaptable settings. Best practices for trail development also includes mitigation of impacts, revegetation of disturbed areas, using recycled materials, and reducing erosion.

### *Key Terms:*

- Boardwalks and Bridges
- Ecosystem Protection
- Tribal and Indigenous Communities
- Vegetation Management

### *Project Partners:*

- Hawaii Dept. of Land and Natural Resources
- Hawaii State Legislature
- Na Ala Hele Program

### *DOT Strategic Goal Alignment:*

- Infrastructure
- Innovation
- Safety

### *Best Practices:*

This case study provides an excellent example of RTP funding bringing several nonprofits together to refurbish a critical trail and boardwalk system. This project involved innovative construction practices that will protect the sensitive Hawaiian ecosystem. The Corps and trail staff from the Na Ala Hele Program worked together to service their community and provide work opportunities to native Hawaiians.

### *Background*

The Alaka'i Swamp Trail is a 3.5-mile-long pathway located in the Na Pali-Kona Forest Reserve and Hono o Na Pali Natural Area Reserve on the island of Kauai. The Alaka'i Swamp is one of the world's highest elevation wetlands and is a defining feature of Hawaii's island landscape. The trail is situated in a marshland that is home to a number of plant and animal species that can only be found in Hawaii. Along with improving hiker safety, protecting these rare creatures was a primary reason for the construction of the original wooden boardwalk. Without a clearly

marked trail, many people got lost and had to be rescued; the terrain looks pretty much the same wherever you look.

To access this unique ecosystem for conservation purposes, the Alaka'i Swamp Trail was established in 1981. The boardwalk, made from large redwood planks lined with wire mesh, allowed access to the sensitive environment without endangering trail users on unstable terrain. Anyone who's made the hike in recent years has experienced the deterioration of the existing boardwalk. In some places, decay and rot left large sections of the boardwalk missing or slowly sinking in the muck. In others, the chicken wire, which is attached to the wood to provide traction, is missing. More than 20 years in the Alakai's harsh environment has taken a toll on the boardwalk, making it a safety hazard for anyone who traverses it.

In September 2016, the Kauai Branch of the Na Ala Hele Program (Hawaii's state-operated trail access program) completed a major maintenance and rehabilitation project on the Alaka'i Swamp Trail. Annually awarded \$16,000 of RTP funding and \$4,000 of state matched funding for regular maintenance, the project received an additional \$500,000 state Capital Improvement Program (CIP) award to replace the severely dilapidated boardwalk and restore safe access to this unique Hawaiian ecosystem.

#### *Project Work*

In 2014, \$500,000 of CIP funding was received from the Hawaii State Legislature to replace boardwalk on the Alaka'i Swamp Trail. It was proposed that sections be reconstructed with innovative slip-proof boardwalk, including sections made of recycled plastic that has been reinforced with fiberglass. This new material is temperature-stable in the humid, sunny environment. The reinforced sections will also resist degradation in heavy moisture.

Work on the project began in May 2016 and was completed in September 2016. The project took 1,900 Na Ala Hele staff hours to complete, with 52 hours of helicopter operations, carrying over 50 loads of material. Volunteers contributed an additional 320 hours of work. Na Ala Hele partnered with Kupu – a nonprofit that operates the Hawaii Youth Conservation Corps – to engage young people in the project. Much of the labor used to expediently complete the project was provided by AmeriCorps members from Kupu. The project also drew additional Na Ala Hele staff from neighboring islands to aid in completion. This is the first time staff from across the state worked together on a trail project in 20 years.

#### *Challenges and Barriers*

Some of the staff that helps maintain state trail systems through the Na Ala Hele Program remember visiting the Alaka'i Swamp Trail when it was first made accessible. Through the course of over 20 years, highly humid conditions and constant use rotted the boardwalk and rusted the mesh stabilizers, leaving many sections of the boardwalk unsafe to public users. Pedestrians would get lost in the swamp while trying to go around marshy terrain and broken sections.

Off-trail trekking damaged sensitive reserve habitat. Although the Alaka'i Swamp Trail received regular maintenance, funded by RTP and state money, the rate of degradation in a harsh environment called for large-scale repairs.

### *Outcomes and Successes*

Today, the Alaka'i Swamp Trail is used for recreational hiking. Trail visitors are given a unique and invaluable experience in native Hawaii and see firsthand the importance of conservation and stewardship of limited resources. School groups and island youth are drawn to the swamp to learn about and experience a part of Hawaii that few would be able to access without the boardwalk trail.

### *For More Information*

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