

# Friends of Hakalau

SUMMER 2013

FRIENDS OF HAKALAU FOREST NATIONAL WILDLIFE REFUGE

ISSUE 15



photo by J.B. Friday



Male koa moth

Moth outbreak strips leaves of koa trees at Hakalau



Koa moth inchworm

## Is this New England in November?

by J.B. Friday

Visitors driving up to Hakalau this spring along the Saddle Road from Hilo encountered a landscape that looked like New England in November. An unusual outbreak of caterpillars of the koa looper moth (*Scotorythra paludicola*) defoliated almost every koa tree in sight. While the koa moth is native to Hawai'i and is always present in low numbers, outbreaks on this scale are rare. The last large outbreak on Hawai'i Island was in the 1950s, although there have been four outbreaks in the past 60 years on Maui. The outbreak that started in late December 2012 above Hilo has spread to an area of over 50,000 acres. By

May and June areas in Kona, Kohala, and Ka'u were also affected. After an outbreak occurs caterpillar populations usually crash back down to low levels and the forest returns to normal.

Effects of the outbreak on the koa trees at the Hakalau Forest National Wildlife Refuge have been patchy, with many koa trees losing all their leaves but others less affected. Based on past observations, foresters expect most of the healthy trees to survive, if there are not repeated outbreaks. Koa trees that were defoliated earlier in the spring are growing new leaves now. While the koa moth feeds almost exclusively on koa,

it has also defoliated albizia trees (*Falcateria moluccana*) at Akaka Falls.

Caterpillars for the koa moth are green to brown or black inchworms up to about an

For more info on the  
Koa Moth:

<http://www.ctahr.Hawaii.edu/forestry/disease/index.html>

inch long. The moths themselves are light tan with dark markings and a wingspan of 1 to 2 inches.

For photos of the outbreak see: <http://www.flickr.com/groups/koamoth/>



Male koa moth and Koa moth inchworm photos by Jesse Eiben.

FOHE, PO Box 6065, Hilo, HI 92020  
[www.friendsofhakalauforest.org](http://www.friendsofhakalauforest.org)  
[friendsofhakalauforest@gmail.com](mailto:friendsofhakalauforest@gmail.com)

Koa Moth, continued

Residents of cabins up in the affected koa forest have reported “blizzards” of moths at night. The young caterpillars feed by scraping the surface of the koa “leaves” or phyllodes and also feed on the new green seedpods.

Researchers from the USGS Pacific Island Ecosystem Research Center, the UH Hilo Hawai‘i Cooperative Studies Unit, the USDA Forest Service, and UH all have been tracking the outbreak and looking for patterns and causes while the Hawai‘i Division of Forestry and Wildlife has been surveying the extent of the outbreak from the air. At Hakalau researchers have been determining caterpillar densities, tracking caterpillar cohort progression over time, measuring rates at which parasitoids attack caterpillars, and identifying whether birds forage on koa with large numbers of koa moth caterpillars rather than on the ‘ōhi‘a they normally prefer. Another new project will track how much growth of the koa trees at Hakalau has been set back because of the defoliation.



## From the President's Perch:

By Rick Camp  
FOHF President

I am going to take this opportunity to capitalize on the FOHF Newsletter to call for help through more membership involvement. Simply put, members, both local and visiting, have several opportunities to help Hakalau Forest National Wildlife Refuge (hereafter Refuge) through service trips; staffing the FOHF education booth at community events; and attending the Sept and Dec lecture series.

We have two members-only service trips planned for 7 and 21 December at the refuge. These are opportunities to help the Refuge control invasive weeds, and if weather permits, paint the Volunteer Cabin. In addition, volunteers will have a chance to bird and botanize afterwards. Send an email with subject “Volunteering Service Trip” to [friendsofhakalauforest@gmail.com](mailto:friendsofhakalauforest@gmail.com), and visit our website at [www.friendsofhakalauforest.org](http://www.friendsofhakalauforest.org) for an up-to-the-minute schedule.

The Refuge will hold its annual Open House on 19 October. Guided hikes, green house tours, promotional activities and colorful displays will be offered to the general public. FOHF will assist with this event and members can call and volunteer directly with the refuge at 808-443-2300. Wear your FOHF t-shirt and hope for sunshine. We will also have a table at the Open House to promote the FOHF. To help staff the FOHF table please send an email with subject “Volunteering Open House” to [friendsofhakalauforest@gmail.com](mailto:friendsofhakalauforest@gmail.com).

As a fundraiser and to complete the \$1,000 matching gift to the Jack Jeffrey Conservation Education Fund, FOHF is offering personally guided bird tour and photography walk by Jack Jeffrey ([www.jackjeffreypphoto.com](http://www.jackjeffreypphoto.com)) and Rob Shallenberger ([www.shallenbergerphoto.com](http://www.shallenbergerphoto.com)), respectively. Jack is a professional bird tour guide, and retired wildlife biologist for the Refuge. He has more than three decades of studying, photographing and enjoying Hawai‘ian birds. Rob is a nature tour leader and nature photograph instructor, and retired from a career in conservation with the USFWS and The Nature Conservancy. He is a published wildlife and nature photographer. The guided bird tour and photography walk are available to members only, and group sizes are limited. Cost is \$75/member and spaces will fill up fast. For more information and to sign up send an email with subject “Open House Guided Tours” to [friendsofhakalauforest@gmail.com](mailto:friendsofhakalauforest@gmail.com).

In August, Marguerite Hill, USFWS, met with the Board to review the FOHF’s status and address several issues. Board members Dick, J.B., Rob, and guests Marguerite and Jim Kraus had a day trip to the Maulua tract and discussed developing a plan for managing public visitation to the tract and trails. The next day Marguerite and Jim, and the FOHF Board members Dick, J.B., Mike and I discussed the status of the FOHF, our major accomplishments, and future projects. In summary, FOHF is a young

organization with ~150 members that has surpassed substantial hurdles in a short time. We are in good standing with a broad membership, have an open dialog with the Refuge staff, and have completed several large, successful projects, including building the water tank for the green house, replacing the roof on the Volunteer Cabin, and developing the Teaching Change program to bring local middle and high school students to the Refuge for hands-on education (see FOHF newsletter #13, Dec 2012; [http://www.friendsofhakalauforest.org/sites/default/files/Newsletter\\_13c\\_2012.pdf](http://www.friendsofhakalauforest.org/sites/default/files/Newsletter_13c_2012.pdf)). While in good standing, FOHF can benefit from focusing on two areas: 1) having more membership involvement, and 2) developing a strategic plan. The former will be necessary to reach a wider selection of the community, while the latter will help guide the FOHF as we continue to grow and develop new projects, take on more community activities, and help the Refuge meet their mission.

When Marguerite asked each Board member what they think is the FOHF's greatest achievement my immediate response was the development, implementation and support of our Teaching Change youth conservation education program. Every month this year we partnered with the University of Hawai'i at Manoa, the USDA Forest Service, and the refuge to bring local students and science teachers to the Refuge to teach a curriculum of environmental science, conservation biology and natural resource management. Thanks to generous funding from the Hawai'i P-20 Program and the Hawai'i Community Foundation, amongst others, we will continue this highly successful program every month over the next year. On Tuesday, 17 Sept, Scott Laursen will talk about the Teaching Change program in the Conference Room at the Institute of Pacific Islands Forestry building (60 Nowelo St. Hilo) from 7-8 pm as part of the free FOHF lecture series that we initiated last year. Please come to find out how you are making a difference by providing hands-on opportunities to Big Island middle- and high-school students, and their teachers.

In addition to maintaining our Teaching Change program we are developing and organizing three new projects: Maulua Development project, a 30<sup>th</sup> anniversary party, and a capital campaign to establish a management endowment. Maulua is the only unit of the Refuge open year-round to visitors. That makes Maulua unique in the Refuge and as such this is an opportunity to influence and inform visitors to the Refuge. If you have visited Maulau please help by emailing your impressions and experiences, your purpose

(e.g., picnic, hiking, birding), and when you visited to [friendsofhakalauforest@gmail.com](mailto:friendsofhakalauforest@gmail.com).

FOHF is also planning a 30<sup>th</sup> anniversary party and establishing a management endowment through a capital campaign for the Refuge. The Refuge was established in 1985 and the FOHF wants to recognize and celebrate three decades of outstanding Hawai'ian bird and plant conservation and management. The Refuge, along with all Federal agencies through the sequester, faces stiff budget cuts and will not be able to maintain its current level of forest restoration and management. Jim Kraus provides a summary of the known and anticipated impacts of sequestration on the Refuge. Therefore, the FOHF is looking at establishing a management endowment to help bridge the funding gap. The Maulua Development, anniversary party, and capital campaign projects will take time to develop and implement. However, with active participation on the part of our membership we can make all three projects happen. Send an email with subject "Volunteering" to [friendsofhakalauforest@gmail.com](mailto:friendsofhakalauforest@gmail.com) to participate in helping make these worthwhile projects a reality.

*Rick Camp*, President



September 17 FOHF Lecture 7-8 pm  
Scott Laursen "Teaching Change"

October 19 Refuge Open House

November 16 Aloha Honua Festival at  
Honoli'i Park

December 7 & 21 Service trips to the  
refuge.

Staffing the FOHF education booth at  
community events

December attend the FOHF Lecture  
series.

Anytime – **we need your help making**  
"bird pins" for the keiki.



## Just for You

by *Emily Needham*

It is the time of year when we begin to decide on colors for the next batch of FOHF tee shirts. Would you like to see them in your favorite color? The men on the Board are requesting black (which will require some changes on the logo), and some with long sleeves. How about tank tops? Let me know your ideas by

Sending an email with subject

"Tee Shirts" to

[friendsofhakalauforest@gmail.com](mailto:friendsofhakalauforest@gmail.com)



## Donations Welcomed to JJ Conservation Education Grant Fund

Donations to the Jack Jeffrey Conservation Education Grant fund are still welcome. The response to the call for donations in the Spring Newsletter was so generous that Kirk Dawson doubled his match to \$1,000! Having collected \$913 since Kirk's April offer, Friends of Hakalau Forest NWR has almost reached its new match of \$1,000. The 2013 grant went to 'Imi Pono no ka 'Aina, the environmental education program of the Three Mountain Alliance, to bring students to Hakalau Forest National Wildlife Refuge for

conservation biology education and field experience. We are thinking about doubling the size of the 2014 grant to \$2,000. Please keep your contributions coming to support that goal. You might even consider following Kirk's footsteps by offering a challenge match of your own to keep the momentum going. Checks should be mailed and payable to Friends of Hakalau Forest, P.O. Box 6065, Hilo, HI 96720 with a notation that the money is designated for the "JJ Conservation Education Grant".

*Dick Wass*

ongoing



*Teaching Change*  
youth conservation education program.

FOHF  
projects



completed

*New roof on the Volunteer Cabin*

completed



*Water tank for irrigation in the Greenhouse*

**Refuge Update: September 2013****From Jim Kraus, Refuge Manager**

By all measures, this has been a busy, and demanding year for HFNWR. Lots of contract work had to be initiated because past efforts to get projects approved and funded internally and with partners were finally successful. Some projects were finished up like the Shipman fencing that subdivides the Unit into 3 more manageable sized parcels for ungulate control, while others are ongoing (fence maintenance and ungulate control in 7 units) or recently completed, and others are just beginning (our new greenhouse being constructed for rare plants from the PEPP program). Then, early in the year we began to hear about Koa defoliation on the Hamakua coast. Eventually, we found ourselves planting trees in July in the midst of moth “flurries” that were reminiscent of a snowstorm (not of snowflakes but thousands of white, swarming native moths-koa loopers). We are hopeful the forest will be resilient and fully recover.

This is now the era of “flat and declining budgets” and many budget uncertainties for most Federal agencies. We are adjusting week in and week out to staff vacancies that remain unfilled, and adapting our schedules, assignments, and hours to a “new normal” that is yet to bottom out, in terms of our future funding levels. Where we have been eager in the past to take on new projects and challenges we are finding ways now to scale back and reduce costs wherever we can. We ask our partners to bear with us as we find our way through this situation.

Our programs with partners have remained very busy. Sixteen local schools and 2 University groups with over 300 students visited the refuge this year in our education partnerships (supported by FOH and others). The refuge had close to 2,000 visitors from all sources this year. Five hundred volunteers contributed 7,300 hours of their time this year.

**New reports completed:** Our research colleagues in USGS have recently completed 2 FWS funded reports for the refuge. The first report is a new study evaluating abundance and distribution of Feral Pigs at HFNWR from 2007-2013 led by USGS scientist Steve Hess. The Service funded study applies and refines ungulate survey methods previously developed at HFNWR. As we are keenly aware, there was a resurgence of pigs on all 8 management units at HFNWR from the mid to late 2000s stemming from chronic staff turnover, intermittent funding of contract ungulate control and fence maintenance as well as vandalism in the form of broken locks/gates, cut fences/stolen and molested snares on refuge lands. Survey results show a peak estimate of nearly 500 pigs on 7 refuge management units in 2010 and a modest reduction in some units by 2013. Refuge staff and contractors removed 328 pigs from management units during 2012. Funding for ungulate control contracts is uncertain which may diminish future pig control capabilities on the refuge before eradication is achieved.

A second USGS report will be published soon analyzing Hakalau Forest NWR bird surveys from 1987-2012. Service Inventory and Monitoring (I&M) funds were provided to analyze the most recent Hakalau bird census information using traditional Distance sampling procedures and log-linear trend analysis and also application of state-space methodology to Hawaii forest birds. Hopefully the result will be more accurate estimates of the number of birds out there and population models of the bird species via Integrated Population Modeling.

**Nene project plans suspended:** Plans for possible 20 year collaboration on enhancing nene nesting habitat at the Hakalau Forest have fallen through due to recent budget limitations affecting the key parties ability to initiate the project as originally planned. The U.S. Army Pohakuloa Training Area presented the Big Island NWR Complex with a substantially modified Draft MOA at the end of July. The MOA, outlining the construction and management of 2 predator proof fenced installations on refuge land, lacked salary provisions for refuge support staff and other funding we expected. The Army’s decision altered the project and thus, no longer met conditions required by the refuge that it be self-sustaining with no net increase in workload. Reduced staff levels at the refuge could not support the additional work at this time without changing refuge priorities currently focused on ungulate and weed control, forest bird monitoring, and native forest restoration.

**Koa Moth Defoliation:** Stay tuned on this issue. The 2013 event continued with a vengeance during July and into August at HFNWR effecting most of our planted Koa corridors. It remains to be seen what the long term effect on 25+ years of Koa restoration work will be.





**Koa Moth defoliation is visible on planted corridors.**

A significant reduction in the refuge system workforce nationwide is expected over the next several years, primarily through attrition from retirements and transfers. Few positions will be filled once vacated. Flat and declining budgets over multiple years simply will not support the level of staffing we have enjoyed in recent years. This is expected to affect many programs on the ground as adjustments will be required to suspend or reduce some activities to maintain our priorities at the field level.

**Funding:** Our proposal for “Preventing the Imminent Extinction of 27 Hawaiian Plants thru Protection, Propagation, and Outplanting received funding this fiscal year (FY13). This project provides nearly \$500,000 to Hakalau Forest NWR as well as additional funding for Oahu Forest NWR, and will support plant related recovery that would aid rare plant species on the Big Island and Oahu refuges. These funds are being used for fencing, greenhouse expansion, outplantings, and staffing focused on the upper Maulua Unit of the refuge.

After working closely with our Washington, DC Headquarters staff, the refuge was fortunate to receive \$102,000 in carryover funds from the Forest Health Program to assist us in invasive weed control work at HFNWR. Pono Pacific, under contract with the refuge, has recently mobilized their crew to complete this year’s work on Blackberry and Holly control work at HFNWR.



**Koa moth “flurries”**

So, we find ourselves in challenging times, in many ways. Some good news, some bad news. We will just carry on as best we can. The Friends can help, whether by volunteering time at Open House, on Service weekends planting trees, helping with painting projects, funding small projects and public education work, cutting English Holly or other invasives, or working with refuge staff in other ways, everything adds up and contributes to our mission....

**“To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generation of Americans.”**

[I hope to see you all at Open House on October 19 to join us in celebrating the good work here and across the National Wildlife Refuge System.](#)

**- From Jim Kraus, Refuge Manager**