



Friends of Haleakalā National Park

FALL 2017

P.O. Box 322 ☀ Makawao, HI ☀ 96768 ☀ www.fhnp.org

RAPID 'ŌHI'A DEATH THREATENS FORESTS' FOUNDATION TREE

By Lissa Fox Strohecker

Everyone is talking about it, on national and local news channels and within the conservation and hula communities. Each week we learn more about rapid 'ōhi'a death (ROD), the disease that's killing the iconic tree of the Hawaiian forest.

In the fall of 2014, scientists identified the fungus *Ceratocystis fimbriata* as the cause of the mysterious plague of 'ōhi'a in Puna on Hawai'i Island. Aerial surveys since have mapped a swath of destruction over more than 38,000 acres on the Big Island—much wider than initially thought. Rapid 'ōhi'a death now extends to Kona and Volcanoes National Park. Once a stand of 'ōhi'a is infested with ROD, most trees succumb.



The few scientists studying this fungus have been swamped with questions from reporters and land managers across the state as they work to understand this new disease.

A single stricken 'ōhi'a tree dramatically illustrates the effect rapid 'ōhi'a death has on the species that is a foundation of the Hawaiian forest. Hawai'i Island is suffering from the disease, while conservationists on Maui work to prevent its arrival here.

Photo courtesy Ryan Deseixas/The Nature Conservancy

Though ROD is not yet known to exist on Maui, local conservation and land managers meet monthly to share updates on the science of the disease and explore methods to prevent its spread here.

Lloyd Loope, former research scientist with the U.S. Geological Survey, collaborated on a statewide action plan for ROD. Before he passed away in July 2017, he emphasized the importance of 'ōhi'a to the Hawaiian forest. "'Ōhi'a is arguably one of the world's most extreme examples of a 'foundation species,' a tree species absolutely essential to native forest ecosystem function and to the rich endemic biodiversity that Hawaiian forests harbor."

Undoubtedly, people are implicated in ROD's spread. Fungal spores in soil caked onto chain saws and other tree-trimming equipment can transfer the disease to new trees. The fungus can persist in dead 'ōhi'a wood for at least a year. There is new evidence that small, wood-boring beetles may also transmit the disease. The sawdust-like frass (bug poop) these beetles excrete can contain fungal spores.

With all the possible vectors, preventing the arrival of this microscopic pathogen will be difficult, but there are some advantages—primarily a stretch of ocean.

Also, the location and health of Maui forests may be an asset. "Most Maui native forests (where 'ōhi'a thrive) are at high elevations and are healthier than those at lower

See Rapid, page 3

DR. LLOYD LOOPE LED COOPERATIVE CONSERVATION EFFORTS

Nature on Maui lost a great protector with the passing of Dr. Lloyd Loope, who died July 4 at age 74. Dr. Loope was Haleakalā National Park's first research scientist and one of the state's leaders in fighting invasive species.

Born in Virginia, Loope earned his doctorate in botany at Duke University before starting his conservation biology career. In the years before he moved to Maui in 1980, he worked at Wyoming's Grand Teton National Park, helped set up a National Park Service in Spain and worked in Paris for the United Nations Man in the Biosphere Programme before returning to the United States to work at Florida's Everglades National Park.

Loope had become aware of Hawai'i as the world capital of endangered species while at Duke University, so he was excited when the opportunity arose in 1980 to become Haleakalā National Park's first biologist. Big projects of his first decade at Haleakalā included hunting and fencing to get rid of the goats the park was struggling to eliminate. By the late '80s, fencing was pretty much complete, and the goat situation was nearly under control. Meanwhile, Loope's feral-pig management plan laid the groundwork for stopping the pig invasion in Kīpahulu Valley, and his studies verified that, without these invasive animals, the park's plant life flourished.

Then came a new problem—rabbits. In July 1990, someone spotted a rabbit near Hosmer Grove, and the park went on high alert. In addition to tracking and trapping rabbits, Loope took on the job of educating the public about the situation, making front pages around the state with stories about the damage feral rabbits could wreak on the environment. Within months, about a hundred rabbits had been trapped or shot, and the invasion was over.

But the invasion caused park officials to realize that “anything can happen,” Loope said. “We can't just study what we've got. We've got to look ahead.”

Loope and park officials recognized that they needed to work with other agencies to prevent future pest invasions. The park reached out to form partnerships with government agencies, environmental groups and private landowners. These partnerships would be essential to battling the next big problem, miconia, a pretty plant known as “the plague of French Polynesia.”

Miconia calvescens already had destroyed three-quarters of the Tahitian native forest when it showed up as an ornamental plant at nurseries in Nāhiku and Hāna. With an extreme sense of urgency, the national park and its partners pitched in to deal with the problem. This led to the establishment of the Maui Invasive Species Committee (MISC) and to the increasing realization that partnership across property boundaries was required in order to nip such invasions in the bud. Loope's support helped to establish a network of invasive-species committees across the islands.

By the turn of the century, the Interior Department had moved Loope out of the park service and into the United States Geological Survey, but he continued to work with the park and with a wide range of partners concerned about the health of Haleakalā.

Dr. Loope produced many scientific papers and remained active even after his retirement. His last paper, completed in December just before his illness worsened, was a scientific guide for the state's 2017-2019 Rapid 'Ōhi'a Death Strategic Response Plan.

Dr. Loope is survived by his wife Keri Duke, daughter Brook and sons Bennett and Marshall. The family asked friends wishing to honor Dr. Loope to make a donation to the Maui Invasive Species Committee, P.O. Box 983, Makawao, HI 96768.



Dr. Lloyd Loope.

Photo courtesy of Keri Duke.

RAPID 'ŌHI'A DEATH THREATENS ESSENTIAL TREE

Continued from page 1

elevations,” explains Alison Cohan, Maui Nui program director with The Nature Conservancy. Also a member of the Maui ROD working group, Cohan says “Maui is special in that we have a highly involved, passionate and collaborative conservation community that responds quickly and proactively to threats.”

Conservation partners around the state are taking measures to help prevent rapid 'ōhi'a death from toppling more forests. The Nature Conservancy decided to restrict access to its preserves where 'ōhi'a forests thrive. Cohan says, “We are limiting hikes and determining if researchers have traveled from Hawai'i Island. If we do allow access to our preserves, we ensure visitors and researchers wear brand-new gear or borrow site-specific gear for the area. Each person must follow the same strict sanitation and decontamination protocols our staff does.”

Conservation partners in the Maui ROD working group agreed to dedicate gear for separate work sites and clean all gear and tools after every use, even though there is no evidence of the fungus present on Maui yet.

Follow suit. If you head into the forest on the Big Island, decontaminate footwear, gear, clothing, vehicles and tools. Prevent the spread:

- * Don't move 'ōhi'a plants or plant parts or soil interisland. The Hawai'i Department of Agriculture quarantine prohibits such movement except by permit.

- * Clean your gear, including tools, footwear and clothing, with a 70 percent isopropyl alcohol solution (rubbing alcohol).

- * Oil equipment after cleaning to prevent corrosion.

- * Wash and dry clothing and packs in hot water with detergent.

- * Remove soil and thoroughly clean and decontaminate all vehicles and equipment when moving from place to place on Hawai'i Island, and off island.

Find more information online and ways to help: www.rapid'ohi'a.death.org and on Facebook —search for “rapid 'ōhi'a death.”



The iconic *lehua* flower blooms on an 'ōhi'a tree.

Matt Wordeman photo



Lissa Fox Strohecker is the public relations and education specialist for the Maui Invasive Species Committee. She holds a biological sciences degree from Montana State University. This column originally ran in *The Maui News* in April as part of “Kia'i Moku,” “Guarding the Island,” prepared by the Maui Invasive Species Committee to provide information on protecting the island from invasive plants and animals that can threaten the island's environment, economy and quality of life.

An 'ōhi'a tree rises tall in the mist above native forest, whose health depends on the existence of this “foundation” species.

Jeremy Miller photo

SUNRISE RESERVATION SYSTEM UP AND RUNNING

The sunrise from atop Haleakalā is one of nature's grandest spectacles. Unfortunately, as many as a thousand people were showing up to enjoy it each morning, resulting in a daily line of cars desperately seeking parking and a better viewing position, despite potential damage to themselves and/or park resources. That's changed since Feb. 1, when Haleakalā National Park launched a new sunrise reservation system for park visitors traveling in personal or rental vehicles.

Park staff spent a lot of time spreading the word before the new system began, and Superintendent Natalie Gates says, "we are pleased with the rollout so far." It has been successful due to "the combined efforts of many, including the media, *kāpuna*, the Maui Visitors Bureau, Kahului Airport and the State Highways Division. We all worked together to make sure visitors and residents were notified early and in as many locations as possible."

The new system limits vehicles to 150 between the hours of 3 a.m. and 7 a.m., approximately half the number that were showing up before Feb. 1. The reservation system is an interim solution, deemed the best short-term option after the park gathered public input regarding sunrise visitor management in 2016. This past summer, the park held two public meetings and park staff gathered comments to develop a long-term Sunrise Summit Visitor Management Plan, via an Environmental Assessment. The long-term plan is expected to begin in late 2018 or early 2019, after the Environmental Assessment process is completed.

According to the park, many visitors expressed preference for the new reservation system over the previous first come, first served process. "I got to sleep in until 4 a.m. since I knew I had a reserved parking space, instead of waking up even earlier and trying for a spot," one Maui resident said. "More rest for us, and it wasn't as crowded."

Folks turned away at the gate may not share that sentiment. On Feb. 1, 35 arriving cars did not have reservations, and the next day 33 cars arrived without reservations. Recently, the number is 12-18 per day.

Park staff spent two months before reservations were required reaching out to educate the public about the new system. "We contacted hotels, tourism bureaus, posted banners at the airport, and contacted foreign consulates," said Chief of Interpretation Polly Angelakis. "We also posted Visitor FAQs on our website and Trip Advisor and made the info regarding the new system the top post and picture on our Facebook page and our website." Signs along Haleakalā Highway alerted drivers to the change well before they reached Pukalani. Still, not everyone got the word; a visiting Hilo couple whose "bucket list" includes watching sunrise from Haleakalā expressed surprise on learning about the system during a late-October visit.

The system requires sunrise visitors to make reservations online, up to 60 days ahead of time. "All 150 of our Feb.1 sunrise reservations were sold out," Gates said. "Tickets may sell out earlier during holidays or times of high visitation," so sunrise seekers are encouraged to plan ahead.

The one-day, nontransferable \$1.50 sunrise reservation is not sold at the park. It is available only online at reservation.gov. The \$1.50 is the cost to use the reservation.gov system. Reservations are available from 60 days in advance until 4 p.m. the day before planned visit. After 4 p.m. no more reservations are offered for the next day's sunrise. To enter the Summit District between 3 a.m. and 7 a.m. the reservation holder must be present and show both the one-day sunrise reservation receipt for that day and a photo ID matching the reservation name. There is no refund or exchange of the reservation due to inclement weather or change of plans.



The dawn's light is just visible over the horizon in this photo from August 2017.

Asa Ellison photo

See Sunrise, page 5

SPECIALTY PLATES HELP SUPPORT HAWAI'I PARKS

You've probably already seen some of the first specialty license plates in Hawai'i, featuring colorful scenes from Haleakalā National Park and Hawai'i Volcanoes National Park. The plates have been spiffing up vehicles on Hawai'i roads since August. Best of all, they help support the two parks, both at purchase and at annual renewal time.

If you'd like to get the plates for your own car, they are available from your local Department of Motor Vehicles (DMV) office. For more information on how to purchase a specialty plate, visit hawaiiparkplates.com.

The license plates were authorized by a 2015 state law to raise funds for resource protection and education projects at Haleakalā and Hawai'i Volcanoes. The plates feature volcanic views and rare native species like the *nēnē* and the silversword. Sae Design, a Wailuku graphic design company, designed the plates as a donation to the National Park Service. The specialty license plate program will be administered by the DMV, and revenues generated will be managed by Hawai'i Pacific Parks Association, a nonprofit partner that supports six national park sites in Hawai'i and American Samoa.

Initial purchase price of the plates is \$35, with an annual renewal fee of \$25. In each case, the parks receive \$18.

"The specialty plates are a great way to show your state pride and support the protection of natural and cultural resources," said Natalie Gates, superintendent of Haleakalā National Park.

Other national parks that currently benefit from specialty license plate programs include Great Smoky Mountains National Park, Rocky Mountain National Park, Yellowstone National Park, Crater Lake National Park and Yosemite National Park.



SUNRISE RESERVATION SYSTEM UP AND RUNNING Continued from page 4

The park's current policy for Kanaka Maoli conducting cultural practices in the park remains unchanged. There is also no change to the park's current Commercial Use Authorization policy regarding sunrise tours. Commercial permit holders continue to follow the procedures and limits required under the policy and to park at Haleakalā Visitor Center.

The park entrance fee is separate and payable by credit card or park pass on the day of the visit. Visitors are directed by park staff to one of the four parking lots which have views of sunrise over the crater. Vehicles in the sunrise-viewing parking lots (Summit, Haleakalā Visitor Center, Kalahaku and Leleiwi) must display their sunrise reservation printouts on their dashboards. Those camping at Hosmer Grove or planning to hike into the crater must have a sunrise reservation displayed on their vehicle dashboard when entering the summit district between 3 and 7 a.m., even if they do not plan on watching the sunrise, and those who arrive before 3 a.m. without a permit will be asked to leave and risk being issued a citation.

HALEAKALĀ NATIONAL PARK SERVICE TRIPS FOR 2018

You can experience Haleakalā in a whole new way by joining one of our 2018 service trips. Service-trip participants backpack into the crater to a cabin or campsite and back. Staff permitting, an interpretive park ranger will be along on the first day of Service/Learning trips. For dates of the 2018 trips, please see the end of this article on page 8.

The Friends of Haleakalā National Park back-country service trips are typically two-night, three-day trips. This gives the team sufficient time to backpack into and out of the wilderness and still have time to get some work done. The cabin charge is waived for service trip participants in return for their volunteer work on the trip.

One of our tasks is the removal of invasive plants, which are sometimes found at distant spots within the park. The NPS targets for removal exotic plants that are known to be aggressive and destructive to the native ecosystem. Over the past few years, the FHNP has been working to remove three key species: *heterotheca grandaeflora*, bull thistle and, recently, fireweed.

Heterotheca, or telegraph plant, was established at several spots in the crater including two dense populations in the Waikau area, on the east edge of the



A service-trip volunteer works on removing invasive *heterotheca* scattered within a patch of yellow-flowered evening primrose—also an invasive. *Matt Wordeman photo*

Ko'olau Gap; a distributed population located in the central crater near the north edge of the valley floor; and most recently in a large, dense population about a 20-minute walk south of Hōlua cabin.

The strategy for invasive plant removal is to break their reproductive cycle. We attempt to get to the plants before they can release their seeds, collecting any seeds that are present and pulling the plant out of the ground.

Fortunately *heterotheca* likes to grow in loose cinder and is relatively easy to pull by hand. It also has a pleasing fragrance. Unfortunately, each plant is very prolific and grows to maturity quickly. Hence, it is important to make repeated visits to a weed site to get the population under control. Experience at Waikau and central crater have shown that it is possible to control the *heterotheca* population. In areas where we once removed thousands of plants in a day, we now find only dozens. The population near Hōlua still has thousands of plants, so this has been and will remain our focus for a while.

A second invasive that FHNP has been removing is bull thistle. This is a more difficult plant to remove as it grows with a strong, deep tap root and protects itself with a large display of nasty spines. Thistle is also a very prolific plant. Fortunately its distributions have been less widespread. There is a significant population in the grassy pastures at Palikū and another smaller population in the grassy field between Hōlua cabin and the base of the switchbacks. The treatment for this plant is the same as with *heterotheca*. Seeds are collected, and the plant is pulled. Seed collection requires careful technique and leather gloves to avoid the plant's spines. Mature plants are removed by digging them out with a shovel.

Recently, fireweed, which is ubiquitous in the pasture land on the slopes of Haleakalā, has started to appear inside the park. We have not found large populations of these invasive weeds, but we are always on the lookout for them.

In all cases, trip participants count the number of plants that are removed. This data is reported back to the NPS, where it is tracked.

The FHNP is not the only volunteer group removing invasive plants. Ron Nagata has been pulling weeds for decades and is still at it. He and others he recruits have typically focused on the area near Kapalaoa. Ted Rodriguez organizes another group that frequents the Palikū area, performing a variety of tasks for the park.

While weed removal is the most frequent back-country service-trip project, FHNP also helps with cabin maintenance projects. We have prepped and/or painted the inside and out of all three visitors cabins and both ranger cabins over the years. Currently the NPS is *See Service, page 8*

SUPPORT THE FRIENDS OF HALEAKALĀ NATIONAL PARK

Who we are ...

We are a nonprofit organization dedicated to assisting Haleakalā National Park achieve the purposes and goals for which it was established: To preserve Haleakalā's unique eco-systems, scenic character and associated native Hawaiian cultural and spiritual resources so as to leave them unimpaired for the enjoyment of future generations.

What we do ...

- ◆ Facilitate volunteerism to accomplish projects recommended by park staff.
- ◆ Monitor actions and activities that could impact Haleakalā National Park.
- ◆ Urge responsible use of the park by the public.
- ◆ Provide financial assistance for the benefit of the park by soliciting funds from the general public.
- ◆ Promote programs such as Adopt-a-Nēnē to generate funds that will enhance the protection and preservation of the endangered natural resources of the park.
- ◆ Implement programs and activities that increase public awareness and appreciation of the park and its highly diverse geological and biological resources.

What you can do ...

- ◆ **Become** a Friend of Haleakalā National Park.



- ◆ **Adopt-a-Nēnē** – an unusual gift idea.
- ◆ **Volunteer** in the park.
- ◆ **Sign up** for Service Projects.
- ◆ **Serve** on the Board of Directors or Advisory Board of the Friends.

The Adopt-a-Nēnē Program ...

was developed as a fun and educational way for you to become a part of the projects that are being conducted in Haleakalā National Park. The *nēnē* is an endemic bird on the Federal List of Endangered Species. By adopting a *nēnē*, you will be helping us protect not only the *nēnē*, but all endangered species and their important habitat in the park.

- ◆ REGULAR supporters receive “adoption papers” that include information about your *nēnē*, an adoption certificate and a *nēnē* postcard.
- ◆ MĀLAMA supporters receive a postcard pack and all gifts given to Regular supporters.
- ◆ ALI I supporters receive an exclusive matted *nēnē* photo and all gifts given to Regular supporters. They will have their names displayed at the park.
- ◆ ALI I NUI supporters receive an exclusive matted *nēnē* photo, a special certificate for display and all gifts given to Regular supporters. They will also have their names displayed in the park.

Yes! I want to **become a Friend of Haleakalā N.P.** Enclosed is my tax deductible contribution:

\$15 \$25 \$50 \$100 \$500 \$ Other _____

Yes! I want to **Adopt A Nēnē.** Enclosed is my tax deductible contribution:

\$20 Student/Senior \$30 Regular \$50 Mālama \$100 Ali'i \$200+ Ali'i Nui

Send me no gifts please, I want my entire contribution to protect endangered species

Name(s) _____

Address _____

Phone _____ e-mail _____

Make checks payable (in U.S. dollars) to:

Friends of Haleakalā National Park, Inc. Send to P.O. Box 322, Makawao, HI 96768

You can also donate on-line using your credit card at www.fhnp.org

SERVICE TRIPS HELP FIGHT INVASIVE SPECIES

Continued from page 6

re-building the horse shed at Palikū. This will need paint in the near future. Every trip involves a thorough cleaning of the cabin that we stay in, along with repairs when possible.

Occasionally FHNP aids the park in restoration projects by collecting seeds from native plants or planting seedlings raised from these seeds.

We also perform some trail maintenance, such as cutting back overgrowth along the Kaupō Gap Trail.

We always can find ways for all participants to be productive by matching the tasks with the skills and capabilities of members of the group. Tools are provided by the NPS, and training is provided by the trip leader. Please join a trip and help out!

For all overnight trips in the crater, participants need to bring first day's water, sun and rain protection, work gloves, comfortable boots or walking shoes, sleeping bag, extra socks, breakfasts, lunches, dinner food contributions as coordinated by the leader, personal supplies, flashlight and warm clothing. There is no charge for volunteers for these trips, which include a two-night stay in a backcountry cabin equipped with bunks, firewood, dishes and cooking utensils.

Before signing up for a service trip, please go to the FHNP website at www.fhnp.org, create an account, then log into the account to learn more and certify your readiness for a service trip. Check the website for updates or email matt@fhnp.org for information or to sign up.

Here's the service trip schedule for 2018. It is subject to change. The last date of each trip is the return date.
Matt Wordeman



Service-trip volunteer Tim Leist tackles a large and thorny thistle plant.

Jeremy Miller photo

<u>Date</u>	<u>Location</u>	<u>Organizers</u>	<u>Leader Contact Information</u>
Jan. 13-14	Hōlua	Sorin, Alison	Andy: andy@fhnp.org
Feb. 17-19	Hōlua	Christy, Cassie	Cassie: cassie@fhnp.org
March 24-26	Kapalaoa	Arlene, Joani	Christy: christy@fhnp.org
April 21-23	Hōlua	Alison, Keith	Delphine: delphine@fhnp.org
May 26-28	Palikū	Delphine, Keith	Joani: joani@fhnp.org (808) 669-8385
June 9-11	Kapalaoa	Matt, Cassie	Keith: keith@fhnp.org (808) 264-5429
July 4-6	Palikū	Joani, Denton	Matt: matt@fhnp.org (808) 876-1673
Aug. 17-19	Hōlua	Matt, Bobbie, Mike	Sorin: sorin@fhnp.org
Sept. 1-3	Palikū	Matt, Christy	
Oct. 6-8	Kapalaoa	Matt, Andy	
Nov. 10-12	Hōlua	Keith, Andy	
Dec. 1-3	Kapalaoa	Joani, Denton	

Due to trail conditions outside of the park in Kaupō, the NPS will no longer allow service trips to hike out Kaupō Gap; we are working to change that.

We do much more than pull weeds on our service trips. We sometimes scrub, or paint, or clear trails. And of course we eat, laugh, hike, talk story, play cards and enjoy some of the world's best scenery. Join us! *Matt Wordeman photos*



PROGRAM OFFERS INTERSHIPS TO YOUNG CONSERVATIONISTS

Applications are now being accepted for Nā Hua Ho‘ohuli i ka Pono, an internship program specifically designed to help develop Maui’s next generation of conservation leaders. Host agencies for the Spring 2018 Program are the Maui Invasive Species Committee, Maui Nui Botanical Gardens and Maui Nui Seabird Recovery Project. Two positions are available for college-level students who have an interest in integrating conservation as part of the foundation for a future career, in any field they may be pursuing.

Applicants will be selected through a competitive process which includes a formal application, criminal history check and interview. Interns will earn a bi-weekly living allowance of \$475 and are eligible to earn an AmeriCorps Education Award that may be applied toward higher education costs or student loans.

Interested candidates must be available for 19 hours a week from Jan. 22, 2018, to May 11, 2018. Students are responsible for their own transportation and housing accommodations. Completed applications and all required documents must be received by 8 a.m. on Monday, Nov. 27, 2017.

A full time Summer internship will run from June 11 to Aug. 3, 2018, and will have four positions available with multiple host agencies. For more information on both internship terms and to obtain an application packet, please visit www.nhhphawaii.org or contact the Program Coordinator at serena@nhhphawaii.org and (808) 727-2184.

The Nā Hua Ho‘ohuli i ka Pono program is funded by Hau‘oli Mau Loa Foundation, a private Honolulu-based grant-making organization. The program works in partnership with Maui-based conservation agencies and Kupu, an established nonprofit organization that works statewide to link youth with conservation organizations year-round..

**Friends of Haleakala National Park
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Makawao, HI 96768**

Hikers on a misty trail. Photo by service trip participant Michelle Smith, May 2017

