Native Hawaiian Plant Society

Nanea Nā Pua O Ka ʻĀina Aloha

NHPS Newsletter February 2017

OHIAGEDDON?

By Chuck Chimera

Achoo! Now that we're well into the flu season, that person sneezing next to you on the airplane is a good reminder to wash your hands, get lots of rest, eat well and take all the precautions necessary to avoid getting sick. Fortunately, we now live in an era of flu vaccines and other modern medical advancements that can help to maintain our overall health and prevent outbreaks like the 1918 flu pandemic, caused by a particularly deadly strain of the influenza virus that is estimated to have killed as many as 50-100 million people worldwide. More people died during this outbreak than were killed during all of World War I, a total that amounted to three to five percent of the world population! Hopefully the world will never experience such a deadly global pandemic again.

Unfortunately for our native forests, a pathogen possibly as devastating is currently spreading and killing thousands of acres of ʻōhiʻa trees (*Metrosideros polymorpha*) on Hawaiʻi island, and could eliminate all remaining ʻōhiʻa forests throughout the state. The disease, caused by two species of fungus in the genus *Ceratocystis*, is commonly referred to as "Rapid ʻŌhiʻa Death" or ROD for short, because healthy-looking trees turn brown and appear to die within days to weeks after first showing symptoms of infection. Even more troubling, there is no inoculation to protect ʻōhiʻa trees from getting the disease, and no cure to prevent infected trees from dying. Scientists have determined that one species of fungus that causes ROD is related to species from the Caribbean, and the other is related to fungi from Southeast Asia, but both are completely new to science. They may have arrived on cultivated plants and then genetically changed, or mutated, to infect and kill ʻōhiʻa trees. While the origins of the pathogen are still unclear, what's certain is that 50,000 acres of Big Island ʻōhiʻa forest currently shows symptoms of ROD, and that area will increase as the disease continues to spread throughout the island.

Symptoms of ROD include rapid browning of affected tree crowns. (Photo by JB Friday)

There are approximately 860,000 acres of ʻōhiʻa forest statewide, and about 600,000 acres of that are on the Big Island. 50,000 acres of ROD infected trees represents 8% of Hawaiʻi Island's ʻōhiʻa forest or 6% statewide.

Scientists also know that the disease can be spread by spores stuck to wood dust created by beetles that bore into dead and dying trees. Like someone sneezing germs into the air, wind can then blow this dust to

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infect new trees. Spores may also remain viable for at least one year in ʻōhiʻa wood, other plant parts, and soil from infested areas. For that reason, the Hawaii Department of Agriculture created a permanent rule banning the movement of any ʻōhiʻa plants, parts, or products, as well as soil, from the Big Island without inspection and a permit.

Although there is no known cure for ROD, the good news is that it has not yet been found on any neighbor islands. Scientists, managers, politicians, and members of the public met in the state capitol in November to discuss ROD and to review the strategic response plan for the disease. This plan identifies gaps in research, management, and response to ROD and the funding required to meet these needs over the next several years. While government agencies and conservation organizations continue to work on ROD, members of the public can also help to protect our healthy ʻōhiʻa forests. Prevention and early detection are the key. Don't move ʻōhiʻa wood or ʻōhiʻa parts, especially if you don't know their source. Don't move ʻōhiʻa inter-island. If cutting ʻōhiʻa wood, clean tools with 70% alcohol. Clean shoes, clothing, and other gear before and after hiking in the forest (ESPECIALLY if traveling from the Big Island). Wash your vehicle with soap if you've been off-roading or have picked up mud from driving (good for preventing the spread of weeds as well). Finally, if you suspect an ʻōhiʻa tree may have ROD, please contact your local Invasive Species Committee. Although the current prognosis may be grim, with our help, ʻōhiʻa forests will hopefully avoid their own version of the 1918 influenza pandemic, and continue to be an important part of island ecology, culture, and heritage. Gesundheit!

For more information, please visit www.rapidohiadeath.org.

ROD Update from the Gov

In December 2016, Governor David Ige included $3.5 million in his 2017-18 state budget to fund the first year of a 3-year ROD Strategic Response Plan.

Developed by a rapid ʻōhiʻa death working group and presented by the Department of Land & Natural Resources, the plan has seven objectives which range from increased public outreach to creating a "sustainable, coordinated and efficient response" to new outbreaks. The total budget for the 3-year plan is about $10 million.

The governor's budget now goes to the State Legislature for review and approval.

Hibiscus brackenridgei / Maʻo Hau Hele
By Hank Oppenheimer, NHPS Project Leader

Hibiscus brackenridgei. Photo by Hank Oppenheimer

As you have undoubtedly noticed, the past summer was unusually wet. This has meant trying to keep on top of the weed growth in the exclosure during times of the year we have not historically needed to do so. Several trips were made by NHPS volunteers, as well as Plant Extinction Prevention Program staff, and Flyin' Hawaiian Zipline staff, the landowner. As a result, the weedy guinea grass has been knocked back considerably, as well as lantana, *koa haole*, glycine, and other invasive plants. The Hibiscus looked really good at last visit, but the early fall has been somewhat dry, and the plants weren't flowering. Still they were healthy, lush, and several seedlings and saplings are present. *Schiedea salicaria*, an endangered shrub in an endemic genus, is also faring quite well. The fence itself remains intact, and with continued vigilance and minor repairs will continue to protect this special place for years to come. Luck, divine intervention, and the efforts of the Maui Fire Department also stopped a wild fire from getting too close. Those guys (and gals) are awesome!

Schiedea salicaria growing in the exclosure. Photo by Hank Oppenheimer

Mahalo Nui Loa to all the Plant Society volunteers, Flyin` Hawaiian Zipline, and MFD.

President's Message

Without plants to convert sunlight into food, life on earth as we know it would not be possible. The Hawaiian Islands are the most isolated landmass on Planet Earth. As a result, many of the plants that evolved here are found nowhere else. According to the State of Hawai'i Division of Forestry and Wildlife, there are approximately 1,400 vascular plant taxa (including species, subspecies and varieties) native to Hawai'i, and nearly 90% of these are found nowhere else in the world. Of these, 100 have already gone extinct, and 366 are currently listed as endangered or threatened. With less than 1% of the United States' land mass, Hawai'i has 44% of the nation's endangered and threatened plant species. That is why we are known as the "Endangered Species Capital of the World."

More of these unique plants may be lost unless we make continued efforts to help them survive. This newsletter reports on the work NHPS volunteers and others are doing to protect native Hawaiian plants, saving them one place at time. If you can, please volunteer for a project, or support the conservation efforts of others in some way. Check out our regular service trip schedule on Page 7 and watch for our emails about special projects and events. More people power will increase our impact!

Thank you,
Martha Martin,
President, Native Hawaiian Plant Society

Ha'ikū School & Kanahā Pond Updates
By Becky Lau, NHPS Project Leader

Ha'ikū School

Thanks to Anna Mae Shishido, Martha Martin and a couple of NHPS work days, we're gradually pushing back the huge volume of weeds that have been encouraged by all the rain. Chris d'Avella, Plant Collections Manager at Maui Nui Botanical Gardens, has generously donated MNBG's "throwaways," so we have many new plantings, including 'ōhelo kai, 'īlie'e, pōhuehue, 'ōhi'a, two kinds of nehe, and naio papa. We hope to have a few more work days over the next several months. Work at Ha'ikū school is most Mondays and some Thursdays about 3:30 to 5:30.

'Ohai (*sesbania tomentosa*)

Naio papa (a prostrate form of *Myoporum sandwicense*)

(Above) Some of the many new plantings at Ha'ikū School thanks to plant donations from Maui Nui Botanical Gardens.

Kanahā Pond

We have several wonderful workers at the pond and parts are looking really great. We work there the first and third Thursdays of the month - 8:30 to 11:00. Call Becky at 575-2369 for more details.

(Right) A view of 'Īao Valley from Kanahā Pond. Photo by Irene Newhouse.

A Code of Conduct for Viewing Rare Species
By Hank Oppenheimer, Plant Extinction Prevention Program

We all share an interest and passion for our native species, and the rarer they are, it seems the more attention they receive. And rightfully so. However, in recent years, especially with the development of social media, a few bad apples have created problems by sending images and messages with the location of rare species, mostly plants and snails, and the increased visitation has had a negative impact. In order to educate folks about this, a group of professionals from The Department of Land & Natural Resources, Division of Forestry & Wildlife, National Tropical Botanical Garden, The IUCN, PEPP, and others, have developed a simple yet effective (if followed) code of conduct. It is based on the concept of respect, and "do no harm", since excess visitation can damage roots, nearby associated vegetation in the plant community can be trampled, and carelessness can attract predators such as rats, disperse new weeds, etc.

The Code was unveiled at the recent IUCN World Conservation Congress in Honolulu in September, and generated a lot of interest not only locally, but globally.

Researchers, managers, and other folks working with rare species will now have to comply in order to obtain and renew their permits.

One of the simplest things to do of course, is to clean your footwear and gear so they are clean of weed seeds and other pests. Also, if you are lucky enough to encounter rare species, disable the GPS on your camera and phone, so the location is not revealed. This only leads to more impacts. The background in the images should also not reveal the location.

For the full document visit:
https://dlnr.hawaii.gov/ecosystems/files/2016/08/HRPRG_RarePlantCode_Final_Hawaii.pdf

Kahului Library Courtyard Garden
By Lorna Hazen, NHPS Project Leader

Many thanks to Martha Martin, Irene Newhouse, and Anna Mae Shishido who have kept the Kahului Library Courtyard Garden in shape! They come in once a month on the 2nd Thursday from 9am to 11:30. Visitors helping would be welcome. (Hint, hint.)

We have been adding new plants to the garden every so often, however not all of them make it. We were hoping to have an ʻieʻie vine climb up the back wall, but it died suddenly after growing there for a year or more. We can try growing one again. Another one that didn't make it was the *Brighamia rockii* that Chuck Chimera so generously gave us. I'm a little hesitant to try this one again because it's death may be related to the watering. The irrigation comes on for 10 minutes every other morning which may be too much for this plant.

NHPS members, please let the board know if you have any suggestions for planting new plants that you think might grow in this somewhat sandy, watered environment. Some of the plants that we have growing currently are ʻukiʻuki, ʻūlei, naio, palapalai, moa, ēkaha (bird's nest fern), naupaka, ʻilima papa, and the sedges *Carex wahuensis*, *Cyperus javanicus* (ʻahuʻawa) and *Fimbristylis cymosa*.

We are going to prune some branches off the naio in order to let more light in. This should help the garden a lot.

Society members are welcome to come have a look at the courtyard and share with us your ideas for new plants!

Aloha, Lorna

‘Āhihi-Kīna‘u
By Irene Newhouse

NHPS has been going to ‘Āhihi-Kīna‘u to remove pickleweed, *Batis maritima,* from the shore of an anchialine pond since 2013. At that time, only a few volunteer groups had come out, and work was at the section of the pond closest to the access trail, as you can see in Photo 1.


Photo 1

Thanks to NHPS and other volunteer groups, considerable progress has been made. By spring 2016, the weeded area extended around the pond considerably to the right of Photo 1. Persistence pays off!

What’s so important about anchialine ponds like this one? Anchialine ponds contain brackish water, a mix of fresh and salt water that’s unique to each one. The Wikipedia entry on the topic, https://en.wikipedia.org/wiki/Anchialine_pool, features photos of Maui ponds! These ponds form unique habitats, with unique organisms. Maui’s are characterized by cyanobacterial mats. (See https://en.wikipedia.org/wiki/Microbial_mat.) That is, huge numbers of photosynthetic micro-organisms called cyanobacteria form mats, leaving behind a mix of silica and calcium carbonate. They’re fragile. Note that the weeders are sitting on plywood or old boogie boards in order to distribute their weight and lessen the impact on the mat as much as possible.


Photo 2

People not heeding the signs and walking through mats, or even using them as skin treatments, was one reason for the closure of most of ‘Āhihi-Kīna‘u. It’s a Natural Area Reserve, not a park. NARs are intended to serve the interests of the ecosystem, and if people damage it, they can be excluded. Parks are intended to allow people to interact with nature.


Photo 3

In addition, several unique species of shrimp live in the water, some red, some translucent. With these as attractants, endangered ae’o (Photo 3) use the ponds extensively, as do other wading birds like ‘ūlili and kolea. To learn more, there’s a book, “Hawaiian Anchialine Pools: Windows to a Hidden World” (Yamamoto, Iwai and Tagawa). Published in 2105, it appears to be out of print already, as there’s one offered at an astonishing price on Amazon as of December 2016. Fortunately it’s available at local public libraries. Kahului Library’s copy has been lost (though they still have a non-circulating reference copy), Hāna has one copy, and Kihei, Lahaina, and Makawao each have two. Another great resource is the 2011 poster created by the Conservation Council for Hawai‘i. See : http://www.conservehi.org/documents/CCH_PosterGuide11.pdf .


Photo 4

Photo 4 shows the exoskeleton of one of the native shrimp found at the pond. The body is about 1.5 inches long.

Scaevola coriacea (Dwarf naupaka)
By Irene Newhouse

The largest wild stand of dwarf naupaka (*Scaevola coriacea)* is in Waiheʻe. In collaboration with the Plant Extinction Prevention Program, Maui Nui Botanical Garden has an arrangement with the County to maintain it. The PEPP staff are Hank Oppenheimer and Matt Padgett. Trips are on MNBG Weed and Pot Club Wednesdays, and Native Hawaiian Plant Society members are encouraged to participate. The major issues are invasive grasses and *koa haole*. The photo below shows both a grand specimen of the plant, unusually large because it can grow out over the lithified (rock-like) sand, and the invasive grass around it in the non-lithified areas.

A grand specimen of *Scaevola coricea* growing out over lithified (rock-like) sand.

In the photo below, volunteer Anna Mae Shishido has dug up a *koa haole* that was too close to one of the naupaka. In this dry and windswept area, what's above the surface isn't a good guide to what's below. The diameter of the root doesn't match the miniscule amount of green at all!

NHPS Volunteer Anna Mae digging out a pesky *koa haole*.

Dwarf naupaka is endemic to Hawaiʻi, and is now only found on Maui and an offshore islet in Maui Nui; it's extinct on the other islands. This trip doesn't have a high participation rate. Yes, the week day scheduling prevents many people from joining, but it's also to a hot area with a significant uphill climb at the start. Still, we need to persevere, in order to see steady progress.

PLANT PUZZLES by Chuck Chimera

NHPS Word Search Puzzle – Weeds, Pests and Pathogens, Oh My!

A	A	H	Q	U	H	C	L	V	A	L	S	Y	E	Y
R	V	T	Z	K	J	O	M	G	U	R	L	Y	T	A
D	F	A	H	V	V	Q	A	D	Q	J	I	M	O	I
V	U	E	U	P	Q	U	M	T	P	P	T	K	H	C
U	E	D	Q	G	Y	I	A	Y	N	O	T	S	P	E
A	M	A	V	Z	Y	F	K	A	D	H	L	C	Z	R
N	A	I	O	T	H	R	I	P	S	Z	E	V	O	A
T	P	H	C	L	T	O	R	R	F	F	F	W	W	T
Z	S	O	D	O	C	G	U	E	Q	F	I	I	L	O
Y	H	D	M	E	N	L	S	E	B	A	R	W	W	C
J	P	I	H	F	P	I	T	D	E	W	E	Y	Z	Y
B	V	P	P	A	M	P	A	S	G	R	A	S	S	S
K	Z	A	H	Q	P	P	G	I	P	L	N	R	I	T
M	Y	R	N	T	H	N	B	X	Q	L	T	V	T	I
A	J	Y	R	Q	L	E	U	A	C	P	C	B	P	S

AXIS DEER
CERATOCYSTIS
COQUI FROG
LITTLE FIRE ANT
MAMAKI RUST
MICONIA
NAIO THRIPS
PAMPAS GRASS
RAPID OHIA DEATH
STRAWBERRY GUAVA

Answers on next page

NHPS Events & Announcements

Annual NHPS Membership Meeting & Guest Speaker
February 17th (Friday) 2017 at 7:00 pm
Speaker: Alison Cohan, Maui Nui Program Director of The Nature Conservancy Hawai'i, "The Nature Conservancy's forest conservation efforts in Maui Nui"
Location: Hannibal Tavares Community Center, 91 Puklani St., Pukalani (in the Poolside Room)

The Annual NHPS Membership Meeting to elect the 2017 Board of Directors will be held at 6:45 pm, just prior to the lecture.

NHPS Guest Speaker

Alison Cohan, Maui Nui Program Director of The Nature Conservancy Hawai'i will speak on The Nature Conservancy's forest conservation efforts in Maui Nui

Friday, February 17
7:00 pm
Tavares Community Center
91 Pukalani St, Pukalani
(Poolside Room)

This Event is Free and Open to the Public!

Want to be part of the solution and have fun, too?!

Volunteer for one of our service trips. Watch for announcements in your email or contact Irene Newhouse at einew@hotmail.com (808) 264-6977

Regular Service Trips

Kanahā Pond (1st and 3rd Thursdays 8:30-11am)
Contact Becky Lau (808) 575-2369

Ha'ikū School
(Most Mondays and some Thursdays about 3:30 to 5:30) Contact Becky Lau (808) 575-2369

Kahului Library (2nd Thursday 9am-11:30am)
Contact Lorna Hazen (808) 572-6338 or lornajack34@gmail.com

Want to SEE what we've been up to? Visit nhps.smugmug.com

Mahalo Nui Loa

Donors

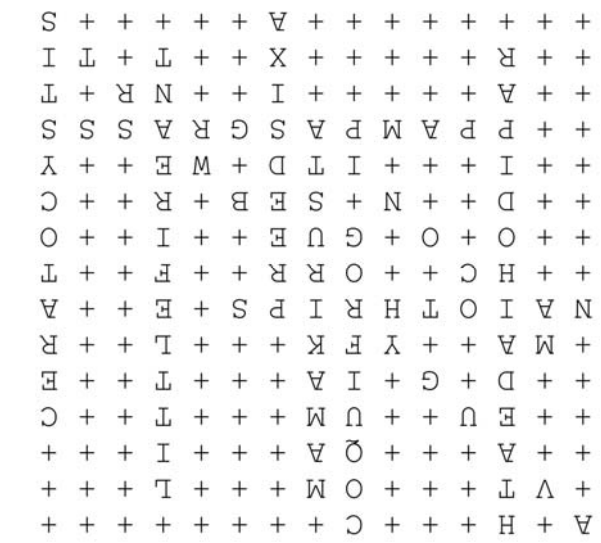
NHPS extends a special *mahalo* to the following donors for their generous contributions in 2016:

Harold Appleton
Debbie Brown
Catherine Davenport
Carolyn Gressitt & John Freyermuth
Isaac & Dana Hall
Hawaiian Legacy Reforestation Initiative
Raymond Higashi
Leslie & Nelson Hiraga
Frank Rust & Angela Kepler
Ian Kinnear
Terry Nutt
Hank Oppenheimer
Karim Wingedheart

Corporate , Government & Exclosure Partners:

Maui County Parks and Recreation for the use of Hannibal Tavares Community Center Pool Room
Maui Nui Botanical Gardens for propagating plants
Haiku Elementary School
Kahului Public Library for the site of the native plantings in the Courtyard Garden
Exclosure Partners:
Duane Ting and family and Flyin' Hawaiian Zipline,
Hawai'i State Department of Land and Natural Resources,
Ulupalakua Ranch

PLANT PUZZLES



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ʻŌhiʻa lehua
Photo by Forest & Kim Starr

NHPS Logo Shirts

NHPS T-Shirts

Short Sleeve $20
Long Sleeve $25

Men's & Women's styles available

***ʻĀwikiwiki* flower design**
by NHPS member Muffie Davis

DON'T FORGET TO RENEW!

Membership Form

Date_____

Name (please print)_____

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(Please print carefully!)

Donation Categories: Individual $20_____ Family $25 _____ Other $_____

Native Hawaiian Plant Society, P.O. Box 5021 Kahului, Hawaiʻi 96733-5021

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