



This variety of 'akoko is a favorite forage of the federally protected Hawaiian yellow-faced bee

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We're on the road — or should I say dirt track — with Executive Director William Butch Haase of the Moloka'i Land Trust on our way to the remote Mokio Preserve on Moloka'i's western tip. He tells us it'll be a bumpy 16-mile round trip to the coast with no air conditioning and "some" dust.

Born in California and raised in the lush wilds of Washington State, Haase was encouraged to follow the traditional path to becoming a successful adult. He focused on Pacific Rim trade and international business while at the University of Hawai'i at Mānoa in 1989. He tried, but couldn't stay away from the call of his childhood.

"I've always been into plants and playing in the dirt since I was a little kid," he says. "My real love is working with the earth, and so that's when I changed my whole path, dropped out of college for a while, then started working at a little local nursery."

Call it destiny. As much as he thought Moloka'i was the worst vacation destination ever at 13 years old, he returned quite often over the years volunteering in native reforestation projects, and built relationships with residents who specialized in native plants. Haase also self educated himself by purchasing every reference book about native Hawaiian plants.

After returning to the Mainland and receiving an Environmental Science degree

at Evergreen State College while owning a landscape contracting business, he came back to Moloka'i to develop a native reforestation project in which he had been volunteering for more than 15 years.

Haase was 38 when he was recruited as executive director for the Moloka'i Land Trust in 2008. Along the way, he's proven why he's perfect for the job — his vast knowledge, vision, sense of humor and enthusiasm were essential to building relationships and getting the word out on the importance of the work being done at the preserve. And since starting, he's guided the non-profit from \$15,000 in assets to \$5 million, along with amassing 2,000 acres of pristine land and pioneering innovative restoration projects in lowland and coastal areas, being done nowhere else in the state.

When it comes to the stewardship of Moloka'i's environment, its natural resources and cultural practices, non-profit organizations and government agencies have a place at the table. And because resources are limited, all work together for the greater good. Haase makes sure the Moloka'i Land Trust is in the middle of it.

"They (residents) fiercely defend the rural quality of this island, you know," explains Haase. "That's why I'm so proud to be able to work with an organization that's in alignment with that vision, providing



At Pueoao, Haase points out the brittle ‘akoko, a federally endangered plant

Haase has come across curious hikers searching for cultural sites. He simply invites them to get a ride back the way they came. I suggest adding signs.

“...the thing is, you know, we don’t want this to look like a national park,” says Haase. “We don’t want to litter the landscape with signs, and ‘Do not do this,’ ‘Do not do that.’ We want to kinda keep it in its original state so that when our community comes down here, it feels just like

traditional subsistence access and activities, education for our youth, an intern program where we provide summer and year-round internships so that students of our island can get great resume-building skills and continue education to college, and then also work with the local schools and have service learning programs that they link to their STEM-based programs.” In this way, students gain real world experience participating in the restoration of sites, and Haase tries to ensure they have a firm foundation on which to carry the environmental and cultural torch into the future.

There’s great interest from schools and various groups from Hawai‘i and the Mainland to volunteer with Moloka‘i Land Trust, but there are challenges unique to the island and the remote restoration site — the lack of accommodations, fleet of four-wheel drive vehicles to access the preserve, sanitation facilities and potable water.

We soon reach the first gate of many providing access to the preserve. The first gate is locked, but the rest are not, making it easy for people to come and go. Your Average Joe or Jane aren’t supposed to be anywhere past the gates, but there have been times when

Moloka‘i, you know. The more stuff we put out, the more attention it tends to draw. So it’s just finding that balance.”

While thoughtfully answering questions, Haase keeps his attention on the dirt track and cautiously maneuvers around ditches, but we still get jostled left and right comparable to a very slow motion roller coaster ride. The truck’s engine is a constant grind.

“Mokio Point is the prominent feature along the coastline out here, so that’s the namesake of the preserve,” he explains. “It’s 1,769 acres that stretches along five miles of shoreline and connects up to the state’s ‘Īlio Point property and The Nature Conservancy’s Mo‘omomi Preserve. So this entire stretch of coastline is conservation land. These lands were donated to us by Moloka‘i Ranch, and there are deed restrictions on them that limit our activities to subsistence activities, conservation activities, education and then limited commercial that supports stewardship of the area without impacting the resources we’re protecting. So it’s not a recreation area.”

Subsistence access to the preserve is obtained via a free hunting or fishing pass for island residents, or is based on the observance of traditional access for residents of the

ahupua'a, a land division system stretching from mountain to sea. Haase explains that the passes allow its users access to only certain parts of the preserve, due to its rugged nature, which is more than what was available when Moloka'i Ranch owned the land.

"This side of the island was inaccessible for hundreds of years," says Haase. "The ranch only allowed ranch employees here so there wasn't a whole lot of people with access. So now we have school kids out, we have teachers and parents that come out who are just amazed. They're like, 'We were born and raised here, and we didn't know what it was like.' So it's been really rewarding to be able to know that we're kind of reopening part of the island to the community."

Haase explains a lot of kids who come in are native Hawaiian, so along with stressing the importance of a healthy ecosystem, he places emphasis on culture as well. Many of them have heard the oli (chant) from their elders that speak of the natural environment, its native birds, plants, wind, rain, but because much of the native ecosystem is non-existent in low-lying areas (below 2,000-3,000 feet in elevation) and been replaced by non-native species, youths don't have a true understanding of what those things really are.

"You know, the culture is so tied to the land that when you disrupt the land and the living system of the land, you also disrupt the culture," says Haase. "So by restoring the land, you restore that cultural heritage

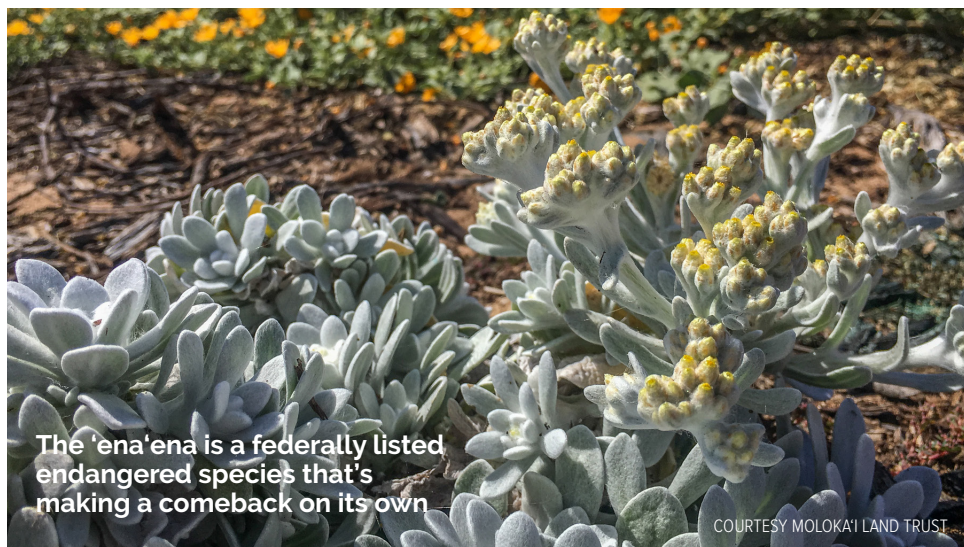
and linkage, and strengthen the culture as a result."

Through the windshield, I notice the dirt path has turned into sand. Haase explains that we're now within an ancient dune strip that runs from Mo'omomi Preserve and crosses over the highland toward Pāpōhaku Beach. The area is known as Keonelele, which means "flying sand." Like Kalaupapa, Mo'omomi is a rare low bank section of the cliff-strewn north shoreline, and it's where the winds blow up carrying sand, something that's been going on for tens of thousands of years.

On the way to the coast, Haase slows down along the road to show us a test plot site. I see weeds, grass, shrubs, trees. Haase sees native pili grass, wiliwili, naio, 'iliahi or sandalwood — he says it's probably the first sandalwood growing back on west Moloka'i since the sandalwood era about 150 years ago. He also sees a climax canopy, understory, shrub level plants and ground cover, the perfect makings for a multistory canopy. In all, there are 25 species of native plants within this site doing well on their own since 2012.

"My degree is in hydrogeology and forest ecology," explains Haase in response to our different perspectives. "I study the ground, water, how things move over the ground, how things move under the ground, and then the living system on top. Kind of a holistic comprehensive approach to the living system." In short, he sees the Big Picture. "I try to. I try to understand it, always learning," he says,





The 'ena'ena is a federally listed endangered species that's making a comeback on its own

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chuckling.

Haase has also created various restoration techniques in the area, which he says are all doing well. It's all trial and error for him to see what works, what doesn't, and as he says, everyday is a learning process.

Another stop is an ancient adze quarry holding numerous adze flakes and adze pre-forms. It's now overgrown with grass to keep the area stabilized and out of sight of curious eyes. Through his informed explanation, Haase paints a picture of Hawaiian men using the area to make tools from the fine grain basalt, and illustrates how much work goes into each piece before being taken away.

At Pueoao, we step out of the truck to take in views from the highest point on the cliffs along five miles of shoreline. To the far right lies Mo'omomi, to the far left sits 'Ilio Point. Haase leads us to the edge of the cliff, the sound of our footsteps getting lost in the blustery winds. "It's like 450 feet down to the water right here," he says.

Crouching low to the ground, Haase points to what looks like a weed, and explains, "This is one of the things you'd never notice, it's a really rare variety of 'akoko, a federally listed rare plant. It goes completely dormant during the dry season. It's not totally dry yet; I saw some

leaves on it. But when it goes dormant, it just looks like this little stick on the ground, you know, very brittle. And it's really easy to kill just by walking on it. But as you can tell, it grows very flat, papa style. A lot of our coastal plants grow in that papa form out here, you know, because of the wind.

"And then we have this grassy area with the plants and stuff that's a little remnant patch of native ecosystem. The grass is pili grass, but it's pili papa, it's a flat growing pili grass. And then there's 'ilima in there, more rare 'akoko, there's 'ihi, a couple of other types of seasonal grasses on top of there, like kākōnakona ... yeah, like 10 or 12 species living up there."

Haase explains how he goes about determining where native plants are placed, because really, can't you just plant anywhere and see if they survive? "We look for little models like this in the environment to help us develop a roadmap," he explains. "Each island has its own unique plant communities, plant species."

He points out the geology of the cliffs and its varying colors, saying that his geologist friends maintain that the Mokio area has the most complex geology on this part of the island. "... you can look down the cliff

faces and see the dramatic difference in types of flows and substrates ... gray basalt, red cinder, yellow ash deposits. I love being down there at sunset, especially during the solstice because only during this time of year does the sun come round and light up those cliffs. And the golden light on all those reds, oranges and yellows ... unreal."

Native seabirds also roost here, some of whom are riding the winds above our heads and dancing near the sea cliffs. The lovely White-tailed Tropicbirds with their tails like a modified bride's train is something you have to see for yourself. Haase says that in pre-human times, this was a major seabird nesting area with nests from sea level all the way to the tops of the highest mountain.

Haase describes just why seabirds are a key component in restoring this coastal ecosystem. "Seabirds are the main nutrient transport vector for the terrestrial ecosystem," he says. "There were no animals here. And our soils are notoriously low in phosphorous and calcium, and where are those elements common? In the ocean. So seabirds take resources from the ocean, poop them out on land, and are a huge, huge phosphorous, calcium and nitrogen import vector. So by restoring seabirds, we're restoring that critical fertilization component of our native ecosystems and building resilience for climatic events that are super stressful."

He hasn't been able to explore every inch of Mokio Preserve, but what he does know of it, he's shared with people of all ages. "I started out in plants," Haase states with a laugh. "Now, I'm getting (to be an) entomologist, ornithologist, geologist, archaeologist ... People ask me questions about a bird or a bug, and I'm like, 'I'm not an entomologist, but I'll play one for you today!' It's so cool. Everything is tied together, you know. And that's one of the best parts of my job ... like school on a daily basis. And I get to meet really incredible people in various fields; it's so rewarding.

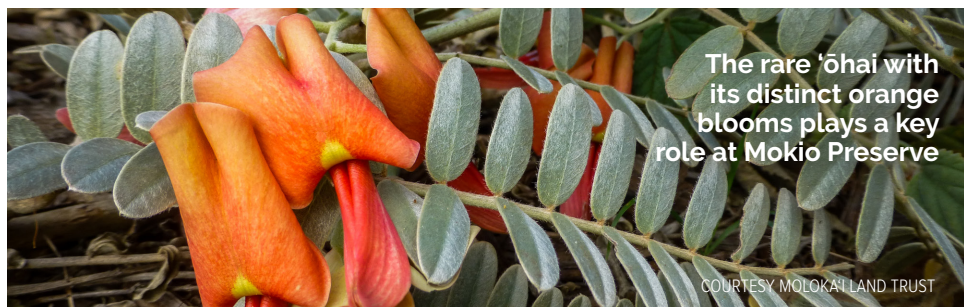
With him, a simple patch of grass turns out to be native pili papa intermingled with 'ilima creating a space for natural recruitment, which Haase says is one of the ultimate signs of success of any restoration project. "You want to see the plants that you're working with regenerate and survive on their own."

The naupaka sports its pretty half flowers, but it's the groundcover at its base that draws his attention because it's a special type of aweoweo papa that grows like a carpet and is unique to this area. It's also drought resistant, helps eliminate weeding and is a component of his restoration strategy to stabilize the area while converting the area to native, ultimately allowing for self regulation, then diversification.

There's a purpose for everything, even for the bothersome non-native kiawe. "It's no fun to work with, cuz it's thorny and hard as stone, and eats chainsaws like granola," says Haase. "But once you get it cut back and chipped up, it ends up being one of the most critical components of a successful restoration. The kiawe's nitrogen enriches the soil system so the soil is pre-fertilized, and the native grasses and vegetation start to move back in and recolonize. Mulch can be used to conserve moisture and prevent weed recolonization. People say, 'Just light a match,' but that would destroy the biomass that's actually the most important factor in the restoration out here. We couldn't make it do this without the kiawe."

Another thing about non-native kiawe is that it sucks water like crazy, so after clearing them from a portion of the reserve, a spring developed. "Yeah, isn't that cool? It's one of the hydrological benefits of replacing non-native vegetation with native vegetation; you're restoring the water cycle and recharging the aquifers. It all equates down to more fresh water coming up along our shorelines, which benefits our fisheries."

We start walking up a hill within a 60-acre unit protected by a fence where interns are working under the hot sun. Outside the fence sits dense kiawe; inside, a variety of native



The rare 'ōhai with its distinct orange blooms plays a key role at Mokio Preserve

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plants are making the area their new home.

“Don’t step on that plant!” exclaims Haase with a heightened sense of guardianship in his voice. “Just follow my steps up here. This is ‘ōhai papa, one of our key plants in this area. It’s basically a two-dimensional tree that’s part of the legume, pea family. If you damage the bark on the branch, it will die out to the tip. One of the reasons these guys became so rare is because of the animals in their attempt to browse them, defoliated them and trampled them to death.” The ‘ōhai is another example of natural recruitment as its seedlings spring up within the project, and as it grows low to the ground, it accumulates organic materials among its branches which then leads to the soil building process.

Behind Haase’s narration of the native plant life, there’s been a constant, peculiar sound drifting in the air. It’s a sort of mewing, not quite a large cat, a distressed cow, here? I haven’t been able to pinpoint it until now.

“These are life-size decoys,” says Haase, pointing to the foot-tall Layson Albatross lookalikes. They’ve been broadcasting a series of sounds, call it a social attraction for birds. “These guys act as nesting colonies, and by placing a group of decoys out here broadcasting sounds, birds that are prospecting and flying by — prospecting is looking for new nesting sites and it’s usually the juveniles that have fledged from an existing site — they’ll fly by and see these, land and investigate, like, ‘Hey! You guys

have got it going on down here!”

It’s been successful according to Haase because within 10 days of setting up the decoys, a single young bird landed and made nest scrapes — “proto nesting trials” according to Haase — meaning there’s a probability that the bird may return with a mate. The surrounding fence is enough to keep the pillaging axis deer out, but it doesn’t keep out seabird predators such as cats, rats and mongoose. There are plans, however, to build a predator-proof fence to help them out.

Haase is a man on a mission balancing behind-the-scenes administrative work with being out in the field. On a water break I ask about instilling the passion he has, in others. “You either got it or you don’t,” he says right off the bat. “Unfortunately. I try, I really try. I think it actually scares people. ‘God, that guy works so hard! Is that what I really want to do?’ Yeah, exactly. I’m bleeding from all the kiawe thorns and sunburnt.” Plus, the results you see are 12 months later! “Yeah exactly,” he says.

“Gotta have long-term vision. Part of the success is actually having a vision of it done, which I do. I can see it all done in my mind. Some of the kupuna say that’s the number one step to making it happen, you know. For me, it’s an exciting place. I love working out here,” Haase emphasizes. “I should not be in the hot sun all day, you know, my skin’s not really designed for it. But I can’t help myself, I love it. I come home all scratched up, bloody and sunburnt, and feeling accomplished. Let’s put it this way, it’s not a 40-hour-a-week job. You gotta do it cuz you love it.” He ends with a self-deprecating laugh, but I see someone who gets to live his passion



every single day.

The hope is to find someone who will carry on his vision, his work. “Yes,” he replies solidly. “Or a little team, you know. I swear, the blood, sweat and tears are part of the fertilizer that makes the magic happen out here. It’s the mana kickstarter!”

Rehydrated, Haase asks, “You guys ready? Let’s go check out some cul-cha!”

Haase leads us uphill to an open grassy area near the cliff’s edge marked by a black low stone wall. Earlier in our tour, he had mentioned these temporary housing sites that had artifacts, adze flakes, remnants from fishing ... the past laid out for all to see. “An archeologist can look at the items on the ground, the dispersion of them, the size of the shells, the prevalence of those things ... and they oftentimes have slab line fire boxes, they can get charcoal, carbon date it, so they can tell you the health of marine resources in that area during that time period. The carbon, the charcoal can even tell us exactly what species of plants they were burning.

“So for instance, this site, Ka’a, was burning mehame and olopua and ‘ūlei — and mehame and olopua are mesic forest species. People think of this area as this barren wasteland, but as recent as the 1500s, there were still mesic forest species that went all the way down to the coastline. And originally, this was forested all the way from the summit to the shore, to the cliffs. So there’s been major land alterations and changes ... from humans.”

On our way back to his truck, Haase picks up something that looks like coral. “It’s comprised of coral sand made by the uhu (parrot fish), eating and pooping,” he says with a smile. “It’s a root cast or rhizolith, which is a petrified sand cast of ancient plant roots, probably beach naupaka that grew in this spot thousands of years ago. You know that most of the sand in Hawai’i is uhu poop, you know that, right? Yeah, the uhu eat the coral and poop out sand, and the majority of our sand is fish poop. Yup, so think about how many uhu sacrificed for that H-1.” We all break out laughing.

Our day at Mokio Preserve has been surreal. It’s an incredible experience taking in its pristine raw beauty while trying to absorb an incredible amount of fascinating information provided by Haase. His passion is contagious.

Soon we’re on our way to the airport and I’m already feeling a bit nostalgic about Mokio. I’m guessing Haase has a collection of sweet moments he’ll always savor. “Discovering the ‘ōhai plant was a very joyful moment, that was pretty profound,” he recalls. “Finding the ‘iwa roosting site was momentous. Stumbling across undocumented cultural sites with artifacts lying around; that sense of discovery and reverence, you know. Finding new endangered species populations ...

“There are the moments when I’m just out there, sometimes I’ll work late. The crew will go home. I have my own vehicle so I’ll drive out when I feel like it, which is near sunset, and in those late moments of just being in the preserve all by yourself ... the light starts changing, the birds are out. I’ve had some lovely moments there. Witnessing a full-circle rainbow on the edge of the cliffs. That’s pretty awesome too.”

Oh, did I mention the endangered Hawaiian yellow bee that’s the size of a gnat? Well, you’ll just have to learn about that one and all the other native bees from Haase himself. He may not be an entomologist, but he’ll be one for you if you need it.