

Lisa “Cali” Crampton
Project Leader
Kaua’i Forest Bird Recovery Project

Can you please introduce yourself? What is your name?

Lisa “Cali” Crampton
My name is Dr. Lisa “Cali” Crampton. I’m the Program Manager of the Kaua’i Forest Bird Recovery Project. I have been in charge of this project, which in fact is many projects, since 2010.

The current ‘akikiki conservation effort seems to be a complex interaction between different organizations and governmental entities. Can you tell us more about who’s involved, who’s doing what, and what the interrelationships between all these players are?

Lisa “Cali” Crampton
It’s important to understand that the Kaua’i Forest Bird Recovery Project is a collaborative effort between the University of Hawai’i and the State’s DLNR - the Department of Land and Natural Resources, Division of Forestry And Wildlife (DOFAW). So you have two of the major players - the university and the state - working in tandem to solve the problems of saving Kaua’i’s endangered forest bird species. Of course, given that the ‘Endangered Species Act’ is a federal act, the other major player is the Fish and Wildlife Service. So we must get special permits from the Fish and Wildlife Service to work on endangered species, and a lot of our funding comes from pots of money that are devoted to endangered species’ recovery, including the grant that is funding the ‘akikiki effort.

Above and beyond that, we have a not-for-profit arm, Garden Island Resource Conservation and Development (GIRCD), that allows us some liberty to fundraise and receive donations in other ways. In this conservation effort, the ‘akikiki effort, because we’re wild bird experts, and not ‘birds in the transition to captivity’ or ‘in captivity’, or as people like to call it, in ‘conservation holding’ or ‘conservation breeding’, we have engaged additional partners who are specialists in that field. Those are Pacific Rim Conservation (PRC), Pacific Bird Conservation, and the San Diego Zoo Wildlife Alliance (SDZWA). Of course, recognizing the urgent nature of this project, we’re also working with the American Bird Conservancy (ABC) to fill some funding gaps for us.

What is this ‘akikiki conservation effort about? What is at stake?

Lisa “Cali” Crampton
We have been studying the ‘akikiki, an endemic honeycreeper of Kaua’i, since about 2010 when it was first listed as endangered. And at the time, populations were already quite small, at about a thousand individuals, and they were suffering severe declines. So a listing decision was warranted, and we were provided with funding to start understanding what was going on with

the 'akikiki. Until that point, no one had really done ecological studies on the 'akikiki. Two years into that study, we did another population estimate and realized that it was probably more like 500 or fewer 'akikiki left on the landscape, which prompted a series of emergency meetings to decide what to do. I mean, 500 individuals, that's not a very large population, and when you get there, you start thinking about, you know, triage, emergency medicine, and all those things.

So the result of those meetings in 2013, and 2014, was a two-fold plan: one, to collect 'akikiki eggs and bring them into conservation breeding - so to provide an insurance population against immediate extinction. And two, to focus on trying to conserve the remaining 'akikiki in the wild - so implementing measures such as rat control, habitat management, and really trying hard to figure out how on Earth we could control the threat of mosquito-borne disease on the landscape.

Part One of the plan was bringing eggs into conservation breeding, and the reason why we chose to bring eggs into conservation breeding - as opposed to adult birds - is because it's less impactful on a population to remove eggs. Adult females will usually relay and have a second clutch, whereas when you remove an adult bird from a population, you're removing tried and true breeders, and that action, in and of itself, can have population consequences. So we were able to collect somewhere near 60 eggs during that effort from 2015 to 2018, and most of them hatched, and most of the eggs that hatched also then fledged from the nest and survived to adulthood, and some of them started breeding in those conservation breeding facilities. However, the net result of all of that was that we continued to have about 45 'akikiki in conservation breeding, because the reproduction only offset mortality. We never saw any growth of that population. Moreover, the population, overall, was aging. We did this from 2015 to 2018. This year, some of the oldest birds in the population are eight years old, and we have no idea how long 'akikiki live.

By collecting all these 'akikiki eggs, we got to know the remaining 'akikiki on the landscape well. We had to find their nests, and identify their territories, and we put bands with unique color combinations around the legs of the adults. And so we got to really understand what was going on, demographically, with this population. Demography is the study of population growth and structure. So we got to really understand a lot about the demography of the 'akikiki population, and what we observed was that despite a small uptick in the population in 2018, from the time we started studying the 'akikiki carefully in 2015, while we were collecting eggs, by 2020, the population had catastrophically collapsed.

So despite the habitat management, despite the rat control, the 'akikiki numbers were just falling, and we had this insurance population in conservation breeding, but it was only this static number of 45, and it wasn't growing. So it wasn't providing as much insurance as we had hoped. And meanwhile in 2020, when Justin Hite, our Field Supervisor, first started to get really worried, there were a handful of 'akikiki left in the stronghold of 'akikiki, whereas previously there had been more than one hundred birds. So he sounded the alarm bells, and at this time of year (May), in 2021, we met with all those partners that I talked about, and we had an emergency meeting to try to figure out what to do so. Should we do more conservation breeding? Were there any ways we could start to control mosquitoes in the landscape? How close were we to being able to deal with that? What were the options at our disposal?

So we met, off and on, for about six months, and eventually that group became a much larger group that involved a bunch of statewide partners trying to really understand the magnitude of the problem, and the potential solutions. We considered everything that might possibly save the 'akikiki, including more conservation breeding. Did conservation breeding now need to focus on bringing adults in from the wild, not just eggs? Should we think about translocating 'akikiki to an island that had no mosquitoes on it? Because on the Big Island, they have higher elevation forests and haven't experienced these kinds of population crashes that Kaua'i and Maui are seeing.

So by January of 2022, we had a road map forward, and it was just very obvious to everybody that with the small population sizes of the 'akikiki, and how fast they were declining on the landscape, and how far off still landscape level mosquito control was, that we had to double down on conservation breeding and start bringing both adults and eggs into captivity. The way federal and state grant machineries work, the paperwork to get money from one agency to another, and all those things, they take time, and it was another year yet until we could have the money to do this big project that we're all involved in now, which is finding nest of 'akikiki and then collect the eggs and bring in the adults to captivity. But we've had to adjust mid-stream because it seems that adults in the breeding season are too stressed out to make a good transition, they have all the breeding hormones going to captivity. So we're going to focus on bringing them into captivity in June, when breeding starts to wane.

When Justin sounded the alarm in May of 2020 through Spring of 2022, we continued to have a few 'akikiki at the Halepa'akai site. This had formerly been the stronghold for 'akikiki. In fact, in 2015, there were more than one hundred there, and before 2015 surely many more, but we never counted them! Well what we saw there last year, in March, was this: the last breeding pair tried to have a nest and before they could complete it, the female disappeared off the landscape leaving only her mate, a male, and their offspring of the previous year, likely also a male 'akikiki. So two males at that site. That's what we call extirpation, right? When a species doesn't occur somewhere anymore. So for the remainder of that spring, we continued to see the male, whose nickname was "Carrot", and his offspring, and in the Fall of 2022, we collected Carrot and took him to the Maui Breeding Conservation facility, leaving that other 'akikiki there because we couldn't catch it.

I'm bringing that up to highlight the fact that all our efforts now are in these two areas that have never had very many 'akikiki, but for some reason, the mosquito dynamics there are different. So we knew there were 3 or 4 at our site called Mohihi, and we knew that at one time at least, there had been up to eight pairs at this other site called Upper Upper Kawaikōi.

So we knew we were looking at trying to collect maybe 10 pairs and their eggs, and we knew also that there were probably some 'akikiki in parts of the Alaka'i Swamp that we had never been able to visit before, because we've always been so busy doing other activities. And those sites, in areas that we had never visited before, likely accounted for another 10 pairs or 20 'akikiki. So that puts our total population estimate for 'akikiki at about 40 individuals. So one thousand when I started in 2010, 500 in 2012, and now in 2023, 40 individuals!

So all our efforts this year have focused on this Mohihi site, and this Upper Kawaikōi site, and what we're doing is we're finding nests. 'Akikiki nests are almost always in the terminal branches of ō'hia trees. If you'd try to crawl out along the branch to get to the nest, the branch would break and you'd fall out of the tree which, I think, explains why rat predation has never been that big an issue. So once a nest has been found, we put up a very tall ladder and suspend it away from the nest, with strong ropes, and climb up there, and collect the eggs, and put them into a little incubator that keeps them warm while we get them out of the field. We had always used a 40-foot / 100-pound ladder, but this last week, for the first time, we used a 48-foot / 150-pound ladder. The nest was just that much taller. We needed that extra height and that was the high of our week.

So that's how we started our week: the team managed to pull off that much larger, much heavier ladder, to get a nest without a hitch, and I was so proud of them. However, the rest of the week went really, really poorly. All the other nests that we were trying to collect basically failed. For three days in a row, the team observed nests that either rats got to, or the female had to abandon because of disease. So the rest of the week was full of heartbreaks.

What are the "next steps" for the team?

Lisa "Cali" Crampton

For this coming week, we have no nests to try to collect the eggs from. So the top order is to go and find more nests. We will spend a couple of weeks trying to do that and we suspect that the pairs whose nests failed, and the pair whose nest we collected, will re-nest. One of the nests that rats got to it, the pair is still around. So they should get started quite quickly. For the second nest, it looks like what happened is the male died and the female had to give up sitting on the eggs because normally, the female sits on the eggs and keeps them warm, and the male feeds her. And when the male can't feed her, she just gets too hungry, and for her own survival, she has to leave. So what happens with her will depend on whether there are solo males on the landscape that she can pair with and have another nest. We've seen this happen now at least three times this season, whereas in the past, those kinds of breakups only ever happened between seasons. We have never seen this within season, picking up a new partner, because they never died this fast before. I was out there a couple weeks ago with the crew. We saw this male that died the week after I was out there, and that's the only 'akikiki I saw all day, wandering around in areas that had formerly had a lot more 'akikiki. Sometimes, you go visit your neighbor, and they've just stepped out for a minute, right? So sometimes you have to go to an area three or four times to make sure that there's nobody home and confirm they're really gone. So the team is going to spend a couple of weeks doing that, finding more nests. Then we will collect more nests, and if they cannot find more nests, then we will meet with all of our partners and discuss whether it's time to just go straight to collecting the adults with nets, instead of focusing on nests. We're thinking that this timetable is about the beginning of June, which is normally when nesting starts to wind down.

We're all thinking it's now or never. If we wait another year, there aren't going to be any 'akikiki left to collect. So I took a quick look at my budget earlier this week and determined that we have enough money to continue well into the fall. So the plan is just going to keep going until we run out of money, or until we run out of 'akikiki in the fall.

Do you sometimes feel hopeless?

Lisa "Cali" Crampton

These birds are out there. If their nest fails, they build a new one. If their mate dies, they find a new mate and they build a new nest. The birds keep going. The birds find a way to keep going. While the birds are finding a way to keep going, we will find a way to keep going. We can't give up! And yes, it's hard to be optimistic sometimes. We'd hoped to collect forty 'akikiki this year, and I don't know if we'll get forty. Hopefully by the end of this effort, we'll have at least 80 'akikiki, and that will be the hope of the population. It isn't what we had hoped for, but at least we'll have something. That said, I'm encouraged by how quickly the mosquito control is coming along. So I think that if there are 'akikiki persisting on the landscape, we may get some mosquito control out there soon enough to save those few remaining 'akikiki on the landscape. I also think that if we get mosquito control on the landscape soon enough, then the 'akikiki that we're bringing into conservation holding will not have to be there very long. After all, the goal is to release them back in the wild when there are no mosquitoes. So I'm very hopeful. I am very hopeful that we will have a disease-free landscape. And we can never give up. Because once you give up, there is no hope. So I'm hopeful that there will be a future for 'akikiki.

Is mosquito control the number one goal and objective?

Lisa "Cali" Crampton

Re-establishing the birds' natural habitat is the priority. The future of the 'akikiki, the future of our watersheds on Kaua'i, as we know them, the ongoing cultural legacy of what these birds have meant for generations of Hawaiians, of Polynesians, and settlers that came after depends on it. We must save these birds. Without these birds, Hawai'i will not be Hawai'i.

And so people may ask: how can I help? Well, the environmental assessment of the mosquito control project will go through a final revision over the summer and then will be released in September. We really want the public to understand that mosquito control involves controlling a non-native species to Hawai'i, *the Culex* mosquito, and basically manipulating bacteria within its gut in a non-genetic way. When mosquitoes have different strains of this bacteria in their gut, the male sperm cannot fertilize the egg of the female mosquito, and so she doesn't lay viable eggs, and the population crashes. It's a very safe and effective tool that has been used in mosquito suppression worldwide, including in tropical environments. Male mosquitoes don't bite, so the idea is to release male mosquitoes with a different strain than the females carry on Kaua'i, and have them usurp copulations, or interfere with the female's ability to mate up with a wild male.

So people can help by talking with their neighbors and making sure they understand what this is about because we have had some people spreading a lot of misinformation about the mosquito control project. This misinformation has slowed down our implementation and could continue to do so. So make sure that you understand the facts, and make sure that you're talking to your neighbors. It's critically important. The mosquito control project is going to be an expensive investment in saving our birds and our watersheds, so also please reach out to your legislators and let them know that you care about the birds, and that these things matter to you, so that we continue to see the financial support for these projects grow both at the state level and the federal level.

Another thing people need to understand is that climate change is the reason why mosquitoes have invaded the forest bird habitat. Climate change is making our forests warmer than it used to be, so mosquitoes can now live in Koke'e year round. Every little thing we do to reduce our climate footprint will help, not just the birds, but species across the globe, including us. We've begun to see the terrible toll climate change catastrophes have on human populations, you know, typhoons, flooding, weird weather, fires and all those things. So everybody can do something just by managing their climate footprint and supporting climate friendly initiatives locally, nationally, and globally.

That said, I have a lot of hope because I see how our children's generation is hammering on the climate change narrative, bringing it home and making it the top agenda item. They don't want to live in a climate hell, and people are taking notice. For example, I heard on NPR a few weeks ago about a group of local high school students that had mounted a challenge to the Hawai'i Department of Transportation, saying that it was not doing enough to manage its climate footprint. So I really have a lot of hope.