

Transmissions from Hawaii: Episode 01

TITLE • Kauai's Wild Chickens: Hilarious, Annoying and Totally Fascinating

LENGTH • 46:15

SPEAKERS

Joanna Carolan, Tony Vega, Pamela Aolea Varma, Janoah Young, Eben Gering

Theme music 00:01

Transmissions from Hawaii

Joanna Carolan 00:21

We have, we have chicken paintings, we have chicken magnets, we have chicken pottery, we have chicken, we have chicken umm..

Tony Vega 00:30

That's the voice of Joanna Carolan. And aside from being a longtime resident of the island of Kauai, she's also the owner of Banana Patch Studio, an art studio with multiple locations on Kauai.

Joanna Carolan 00:42

Oh, let's see, I think I said note cards, greeting cards, pottery spoon rests, mugs. (laughing) You name it, we've got the chicken stuff!

Tony Vega 00:54

Joanna opened up shop in 1991 and since then, she's been selling a wide variety of products made on the island, including ceramic tiles, pottery, and fine art, but yes, she also does have quite a few products inspired by Kauai's famous or, depending on who you ask, infamous wild chickens.

Joanna Carolan 01:16

Because you know, they're just one of those things that people notice coming from, from the mainland. They just get a kick out of chickens pretty much being everywhere. So, it's uh, I mean,.. And I think when living here you just get used to them, so it's not as much of a novelty.

Tony Vega 01:36

It's not at all an exaggeration to say that there's chickens pretty much everywhere on Kauai. In fact, when you're walking around on any given day on the island, you're bound to run into one or two, or three, or four, or five or six or seven chickens, because there's just so many of them. And often when visitors arrive on the island, it ends up being one of the very first things that they notice as soon as they get out of the airport.

Joanna Carolan 01:59

I was at the airport one time and this guy was telling a story about how he got off the plane on Kawhi. and right there at the end of the road, when you come out of the airport, is with Kentucky Fried Chicken. And he just thought it was the funniest thing that the whole parking lot was full of chickens. Kind of telling the story of at the top of his voice and you know and laughing hysterically, that's how the irony of..(laughing)

Tony Vega 02:24

Hello, my name is Tony Vega. I'm the Editor in Chief of Wasabi Magazine as well as the producer of this show. And on this very first episode of Transmissions from Hawaii, we are talking about a fascinating aspect of life on the island of Kauai. So Kauai is known for its natural beauty, as well as yes, those chickens we were talking about. And today we are digging deep into that topic, we're covering everything from funny chicken stories to what happens when these chickens become a problem and what science has to teach us about the origins of these interesting little creatures. So stay tuned.

Tony Vega 03:04

Let's begin by talking to someone who's heard more than her fair share of interesting chicken stories.

Pamela Aolea Varma 03:10

I'm Pamela Aolea Varma and I am the writer, and also the publisher, of Kauai Stories and Kauai Stories 2, both of which are collections of about 50 stories apiece about people's lives on the island of Kauai.

Tony Vega 03:29

Volume 1 of Kauai Stories actually has an entire section dedicated to stories about chickens in it. And so when I found this out, I picked up the phone and gave Pamela a call.

Pamela Aolea Varma 03:40

One of the first types of stories I decided to gather was chicken anecdotes.

Tony Vega 03:46

(laughing) So of course yeah, that's where I was gonna go with my questions, so.. Yeah.

Pamela Aolea Varma 03:49

Yeah, you know, it's funny when you, when you called me I didn't really, I didn't recollect it, that actually is one of the places I started. Most of the stories in my books are like mini biographies, so you can really get to know people. But I I knew I wanted a section in my first book about Kauai chickens. They're such a feature of this island that I knew people would have some really great anecdotes. So I sent an email to the vast majority of people in my personal address book, so some were friends, some were business acquaintances, and I said tell me your chicken anecdotes, how do you feel about Kauai's chickens? I sent that email about probably 9pm one night, by 10pm my email box was blowing up. (Tony laughing) By the next morning it was insane. And then the following morning I was meeting some people for breakfast at a small restaurant here, and there was a, there was a line you had to, the place was real popular so you had to wait in line to place your order. We're all standing in line and people were passing me in line as they're getting to their place in line, talking to me about the chicken stories. "Hey, I have one for you, I'm going to email it to you." You know, so just, you know, when you're a writer, you think you're like kind of anonymous because you're, you know, at home with your computer and you're just doing your thing and you're, you know, in your own, in your own head and just moving words around on the computer. (laughing) You go out in public, you find out what touched a chord. And what I found is, not surprisingly, that Kauai's people have a love hate relationship with our island's chickens. Some people love them, some people hate them. (Tony laughing) And the people who love them really love them. And the people who hate them, um, can't wait to get rid of them. (Tony laughing) Which unfortunately for them, it's probably not going to happen anytime soon.

Tony Vega 05:47

Yeah, yeah, yeah. So would you say like, anybody that's been there any significant amount of time seems to have their own chicken story? (laughing)

Pamela Aolea Varma 05:57

Yeah, I would say the vast majority of us have chicken stories. You know, it can be as simple as going up to Waimea Canyon or Kōke 'e, at.. as soon as you park your car and you open the door to get out, at most of the lookouts, chickens come up to your door because they're used to visitors feeding them potato chips or Fritos or whatever. (Tony laughing) So even if you have no attentive feeding, feeding them, they're they're right there by the side of your door. And some of us start thinking, "Huh, what do I have in my car I can give them?" Yeah, and it runs the gamut from that all the way to people who have adopted chickens, and these chickens have become pets of theirs.

Tony Vega 06:37

Having gotten so many submissions and heard so many stories, I had to ask Pamela if she had any favorites.

Pamela Aolea Varma 06:44

So this guy comes home from work at, I can't remember where he was working, but at the time he came home like midnight or later, and he was living in a shack in an area of the island called Moloa'a. He came down the driveway and he said usually the chickens were still pecking around and very perky. But this night, as he came down the driveway, all the chickens were lying on the side of the driveway. (Tony chuckling) He couldn't figure out what was going on. And so he gets out of the car, and there were some that were kind of standing in front of where he needed to drive sort of in a stupor and they wouldn't move out of the way of the car, which is really unusual for chickens that, sometimes they're slow getting out of the way, but they usually move these would not move, he actually had to get up in you know, push them, lift them out of the way. Didn't know what to make of it, and it was late at night so we went in his place and went to sleep. In the morning when he came out, he noticed that there were a lot of half eaten rotten mangoes under the tree where most of the chickens were, so they had apparently eaten fermented mangoes and gotten drunk. And his punchline is "It was a strangely quiet morning." So that's, that's one of my favorites.

Tony Vega 08:03

Besides the funny stories, though, Pamela also made sure to include some really heartwarming tales about people's relationships with chickens.

Pamela Aolea Varma 08:11

People I've spoken to and written about really love chickens have told me they make wonderful pets that they come when you call them, they're really loving, they respond to sounds like if you scrape a, like if your feed, I don't know what they feed him if his cat food or what they feed them, if you scrape the can, they know that sound, and they'll come running and that they're really loyal. So you know, and they've heard a lot of stories of chickens, adult chickens, fostering other animals like bunnies and kittens and.. One of my neighbors had, one of whose sons brought home a baby chicken and the chicken would nest in with the bunnies in the cage. He thought the bunnies were his mom, or mom and dad.

Tony Vega 09:05

So cute.

Pamela Aolea Varma 09:06

Yeah, I guess it's like any other you know, we're accustomed to bringing home cats and dogs, but why, why couldn't a chicken be just as loving as any other animal?! And that's what people experience, you know they share those stories with me.

Tony Vega 09:19

Being that Pamela has been living on Kauai since 1988, she's had her own fair share of interesting experiences with the local chickens. But this one easily takes the cake as the most memorable one.

Joanna Carolan 09:32

One day I, my office has been in my home for more than 20 years, so one day, I'm talking to one of my larger clients on the phone, and thank God he was born and raised in Hawaii. And I'm, he has a lot of investments, so I'm definitely trying to be an adult and have an adult conversation with him. And out of the corner of my eye, I see that one of my cats has brought in an adolescent chicken, and has carried it into the closet of the room where my office was,

Tony Vega 10:11

Oh my gosh.

Pamela Aolea Varma 10:13

So I'm thinking and as I said that cats normally don't go after adolescent chickens, but for some reason this cat was really after this chicken and I didn't want to see carnage happen at all, and certainly not in my office. So I'm trying to nonchalantly carry on this conversation with my client while rescuing this chicken. (Tony laughing) So fortunately, I had a cordless headset at the time, so I'm able to walk around, leave my desk, and I walk over to the chicken, and I'm trying to shoo it out of the office towards the door of my office, which led to the outside, so the chicken can just go run outside and, and run in the field and be safe. And every time I try to shoo the chicken that way, poor little bird brain is going the opposite direction, and the cat is going yeah, this was working in my favor. So I'm still trying to do this and make full sentences for the client, finally I said, you know, I'm going to have to go because I have a chicken in my office and I'm trying to get it out before the cat hurts it, and it's, it's not going on its own. And right then, the cat sinks its claw into the back of the chicken and the chicken "whaa" and my client goes, "I think you better go now."

Tony Vega 11:29

Wow! (laughing)

Pamela Aolea Varma 11:30

The client's a helle guy, born and raised in Hawaii, and thank God because if he had not been born and raised here, I don't know what he would have thought about my professionalism. That was, that was probably 20 years ago, and he's still my client. And I did get that chicken out the door.

Tony Vega 11:48

By the way, Pamela and I did discuss whether she knows anyone that's actually eaten one of Kauai's wild chickens.

Pamela Aolea Varma 11:56

You know, I had a friend who years ago who grew up in the Midwest, he was here on Kauai, still is here on Kauai. But where he grew up, in the Midwest, he was a trapper, so he and you know, a bunch of people in his region would hike through mountains and trap animals to eat them, they survived on that. So one day, he and a friend here on Kauai thought what if we just catch one of these chickens and barbecue it? So they did. They went through the whole process of plucking the thing, the feathers, and getting it ready for cooking. And they cooked it, and cooked it, and no matter how long they cooked it, it never got soft. They said it was very flavorful, but really sinewy and chewy.

Tony Vega 12:41

Huh.

Pamela Aolea Varma 12:42

So it's just kind of a reminder, like, you know, the chickens we buy in the grocery store, they are bred to be meaty and fluffy and not sinewy. But, and they're also not having to run around to save their lives, like a wild chicken.

Tony Vega 12:56

Yeah. I remember there was one little anecdote in the, in the book that involves a recipe, right?! And the punchline was kind of like, you boil the chicken with a rock and then you throw out the chicken and you're left with the rock.

Pamela Aolea Varma 13:11

Exactly. Eat the rock. Exactly. If you're eating if you're cooking a wild Kauai chicken, that's what they say.

Tony Vega 13:18

Right, right, right.

Pamela Aolea Varma 13:19

Yeah, I don't know too many people who've tried it, but that friend of mine who was the the trapper and the hunter, you know, he was really experienced at that from his, his Midwest upbringing, so I thought if anybody could have made that chicken edible, it would have been him and he said it was a serious 'no go'. He's like "Not gonna do that again." I remember said "I don't care how little money I have, I'm not eating a Kauai chicken again."

Tony Vega 13:43

To close out our conversation, I asked Pamela one last question: how would she feel if the chickens were to just disappear one day?

Pamela Aolea Varma 13:51

I would be disappointed, I would be really bummed out. They are a part of Kauai life. And they and as I said they were a canoe animal, it came over with the ancient Polynesians 1500 years ago, so I love that historical connection as well. And you know, some of the chickens, especially the roosters, they are really beautiful.

Tony Vega 14:10

Yeah.

Pamela Aolea Varma 14:11

And most of us who live on Kauai, we prefer the things that give us the rural lifestyle. You know, if we wanted to live in Honolulu or Los Angeles, or Chicago, or New York, we would. The vast majority of us on Kauai are here because we want to be and we've chosen this life and lifestyle. So I love the ruralness of it, of having chickens run by. I think it's funny, they sometimes do really funny things like - have you ever watched a chicken try to fly? They do fly.

Tony Vega 14:42

I've seen them flap their wings and kind of fly. (laughing)

Pamela Aolea Varma 14:45

Yeah, it's not attractive. They are, that's not their forte. (Tony laughing) But they can. You know, things like that, they make, it makes me laugh, I love things, funny, quirky things like that

anywhere but especially on the island of Hawaii, the quirky things along with the beauty and the wonderful people here on Kauai. The quirky things are some of the things that help me really appreciate Kauai as home. Yes, it's totally not generic here. And if we lost her chickens, we'd be just a notch more generic.

Tony Vega 15:16

Yeah.

Pamela Aolea Varma 15:17

And I wouldn't want to see that happen.

Tony Vega 15:19

Yeah, yeah, yeah.

Pamela Aolea Varma 15:20

And unfortunately, I don't know how that could ever happen, because we've got a lot of chickens.

Tony Vega 15:27

That's what I hear.

Tony Vega 15:30

For more stories about chickens as well as just general life on Kauai, make sure to pick up a copy of Kauai Stories. Volume 1 and Volume 2 are out now, and you can find more information at KauaiStories.net. Next up, we're gonna find out who people call when chickens become a problem. But, that's after this quick break.

Tony Vega 16:00

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Tony Vega 16:57

As much as the chickens have become a beloved icon of life on Kauai, they do cause some problems from time to time. Sometimes it's just roosters crowing at all hours of the day, and night! (chuckling) And other times, it's actual property damage. So who do people call when they need some help with the chickens? Well, one person they call is Janoah Young.

Janoah Young 17:18

Hello.

Tony Vega 17:19

Joint owner and account manager at Kani Wildlife Control. Kauai, of course, is famous for the chickens and being that you deal with the wildlife, I assume you guys must get a few calls for chickens?

Janoah Young 17:35

Yes, absolutely.

Tony Vega 17:37

About how frequently would you say that you get calls and related specifically to chicken?

Janoah Young 17:43

Um, gosh, it's hard to say the exact number of calls that we get, but I can tell you, we get it from every, every type of customer, whether it's, whether it's the hotel industry, the restaurant industry, agricultural areas, gardens and growers, residents who can't sleep. Typically the complaints come from people who don't have air conditioning, and then they hear the chickens in the night. And probably one of the biggest of the residential complaints comes from where you have one neighbor who doesn't like the chickens, and then you have the neighbor next door who feeds them and brings them in and welcomes them two or three times a day with regular feedings. So it definitely presents a challenge in the sense that you have, you have the people who love them and the people who hate them.

Tony Vega 18:39

Definitely, definitely, yeah. So what, what is the procedure then for that sort of job? Do you have to trap the chickens?

Janoah Young 18:49

Um, yeah, our primary control method is through trapping. We, we do the best that we can with trapping. We're not ever going to get rid of all of the chickens, but at least if we can reduce the population that works good. We also have some active trapping, where we go out and our WCO's are trained to catch the chickens. And usually we're not even seen and just kind of out of sight out of mind, but they can take the chickens, they're just good at what they do, and they can take the chicken and especially in the restaurant, you know the chickens are so used to being fed that we can change the color of our shirt because if they know that we're there they are to get them, they recognize faces, they recognize shirt colors, and then we'll have to go in undercover and pose as a tourist and, and feed the chicken, and then we're able to capture it live that way.

Tony Vega 19:51

Oh, wow. That's an undercover.

Janoah Young 19:55

Yeah. So chickens, chickens have really good facial recognition and they can recall about 25 faces at a time. And that's why once you've, you know, squirted at a chicken with water, a lot of restaurant workers do things like that to try and deter them from jumping on tables. But once, once you do something with the chicken sees as a threat, the chicken recognizes your face and knows who you are.

Tony Vega 20:21

Wow. Do you guys actually like set traps? Is that easy? Because sometimes you hear about animals like they can recognize the trap, and then they don't go near it.

Janoah Young 20:33

Yeah, chickens are really, they're really good with facial recognition, but they're not too good with traps. (both laughing)

Tony Vega 20:41

Gotcha. I was reading somewhere that there are, sometimes when you trap the chickens, you take them into like the more like forested areas. Is that what you guys do?

Janoah Young 20:56

Um, we actually, very rarely would do something like that. We are a strong believer that there has to be balance, and we're in no way looking to get rid of the chickens, that definitely brings

its own touch to the island, and is, you know, part of what makes Kauai Kauai. But at the same time, there are areas that are just there's just too many. And, and, and there's a health concern with it. And I can tell you, we were working a school recently, and the chickens had just you know, it's an easy place for chickens to be fed, there's it's a large campus, there's trees for roosting, and it's just a prime, a great place for chickens to, to live. But they were roosting in the water fountains, the kids were drinking out of. And so all the droppings were in the water fountain. And, and I mean just a disgusting situation for the students in school and from a health perspective. So anyway, as much as, as much as we do like the chickens and we see the need for balance, we, we don't just release them. But with that being said, we do want to have a purpose for them. And we have several people who really like the chicken and like to eat them. And we have a holding facility where we catch, where we relocate the chickens that we catch. And we feed them for about 30 days. And we just do standard scratch feed, it's about \$10 back from the store, we feed them that for about a month, and after that, that chicken, you know, it tastes better. I'm sure you've heard the stories about cooking a lava rock and rock when lava rock is gone, the chicken is ready to be eaten. Yeah, so the meat from the chickens and stuff when they're wild is probably not preferred by most people, but after you've fed them for about 30 days, they're much more tender.

Tony Vega 23:00

Wow. Okay.

Janoah Young 23:01

So we have several different people in the community, that's our go to people because they've requested, and a couple of them even have holding pens that whenever we have chickens to get rid of, we just go put them in their pens, and then that's their, you know, food for the table, food for the family.

Tony Vega 23:16

Okay, well. To learn more about Kani Wildlife Control and the various services they offer, visit their website at KaniWildlifeControl.com

Janoah Young 23:25

Okay, sounds good.

Tony Vega 23:27

Thank you so much.

Janoah Young 23:28

Thank you very much.

Tony Vega 23:28

Okay, bye.

Janoah Young 23:29

Alright, bye bye.

Tony Vega 23:41

Perhaps one of the first things that people wonder when they arrive on Kauai is where the heck did these chickens even come from in the first place and why are there so many of them? Well, if you ask a local that, they're likely to tell you something like this.

Pamela Aolea Varma 23:55

They are both descended from the my understanding is the native Moa that the Polynesians brought when they first came to Kauai or to Hawaii. So mixed with after you know, every hurricane people's chicken coops got blown away, so we have you know, the, the barnyard varieties of you know, Rhode Island Reds and Plymouth Rock hens and Bantams and they all you know, kind of get together and, and have babies. (laughing)

Tony Vega 24:29

That was Joanna Carolan again. Basically this common understanding says that the chickens are a result of interbreeding. The chickens that were brought over by the Polynesians when they arrived on the islands, and by the way, those chickens are called red junglefowl interbred with domesticated chicken. And there was an explosion in the population of chickens in the aftermath of two specific hurricanes, Hurricane Iwa in 1982, and Hurricane Iniki in 1992. But is this actually the case in order to figure that out, I talked to an evolutionary biologist.

Eben Gering 25:01

My name is Eben Gering, and I'm an Assistant Professor of Biology at Nova Southeastern University.

Tony Vega 25:08

In 2015, Dr. Gering and a team of researchers from Michigan State University published an article focusing on the genetic makeup and ancestry of chickens. So what did the research tell you? What new light did it shed on our understanding of, well, for example, like where these chickens came from?

Eben Gering 25:31

Yeah, so so there was, of course, we, we asked people on Kauai and we read in both scientific literature and popular literature to see what, what stories were around about where these chickens came from and we saw some people reporting that these were entirely, you know, pure red junglefowls that, that descendants of these Polynesian introduced birds. And we also saw people saying that those birds had gone completely extinct in the Hawaiian Islands, and that they'd been replaced by a purely domestic feral population. So our genetic data were able to show that the truth is somewhere in the middle. So the genes that we find in the chickens of Kauai are, some of them have domestic origin and some of them have a closer affinity to red junglefowl, and also match genetic data that were obtained from sub fossils from the Pacific region that predate European contact with, with the Pacific, and that's the potential for domestic chicken, you know, genes to be in, in the pool. So I hope I've put that clearly enough, but let me see if I can summarize. So we found there were genes that were present in Pacific Island chickens before Europeans arrived that are still present in the Hawaii population today. But we also found some genes in this population that must have come from European introduced domesticated chicken. So it's, it's a, it's a, it's a diverse, and what we call admixed, or hybrid gene pool, and you've got some chickens on Kauai that they may they may be found nowhere else on Earth, because they're a unique combination of, of these birds that were introduced centuries ago. And then, these birds that underwent separately a domestication process, modified them and then interbred with the wild Polynesian introduced jungle fowl of Kauai Island.

Tony Vega 27:49

So, so there's evidence that at least part of the lineage goes all the way back to the first group of chickens brought over when people first arrived in Hawaii?

Eben Gering 28:04

So, so possibly, yes, these are very tricky scientific questions. So we can say that, that a DNA sequence that was present in the Pacific region before European contact exists and birds that live on Kauai today. But we can't rule out the possibility that maybe it's important a few centuries ago, the Kauai population, in theory, could have been completely wiped out, and then maybe that those genotypes were reintroduced from someplace else. So that, that remains a possibility that we can't conclusively exclude.

Tony Vega 28:47

Okay, so the research shows that yes, the red junglefowl and domesticated chickens have interbred in order to create the chicken that you see running around Kauai nowadays. But if you've never been to the island, maybe you're wondering, do they even look any different or behave any different from the chicken that you've seen all your life? Well, the answer to that question is yes, but also it's a bit complicated. But chicken in Kauai are known to be a bit more colorful than your average barnyard chicken and that is in large part due to the fact that they have those genes that came from the red junglefowl. The classic coloration of a red junglefowl is red, black and green. Also, they have gray legs and a relatively small body. But perhaps one of the most interesting features of the red jungle fowl is the vocalizations.

Eben Gering 29:38

The feral chickens on koa are smaller than a backyard chicken. They have smaller combs, and they have a range of vocalizations, but the crows have the roosters sound different than a barnyard chicken in North America would tend to sound.

Tony Vega 29:58

In what way is it different? Like is it easily recognizable to like the average person?

Eben Gering 30:03

Yeah. So there's a difference in the cadence and in the pitch. So a domestic chicken, a domestic rooster, that average domestic rooster call would sound something like "eeereer". And the red junglefowl's call is higher pitch, it ends abruptly, and it has fewer syllables. So it's something like that.

Tony Vega 30:35

Yeah.

Eben Gering 30:36

Now the chickens on Kauai, you'll hear this entire range from birds that sound like red junglefowl, and many of them look like red junglefowl, to birds that are bigger bodied, that have some other domesticated traits, like yellow legs, or are certain types of combs that were bred into chickens, and, and they'll they'll have a more sort of classic sounding rooster crow. Yeah, so you see a lot of variation there. And let me just let me just say one, one last thing, though, that that part of the reason it's hard to answer these questions is because there's also a ton of variation out there, just when you just like with dogs, when you look at cross dog breeds. So if you ask, what is a dog, what is it, what is an average dog look like? Well, you've got your Great Danes and your chihuahuas and everything in between. The same is true for domestic chickens. So the broilers

that are, that are raised by the billions annually for human consumption, they have a standard look and, and size and behavior. But for people that are, they're really enthusiastic about some of their rare breeds of chicken, they know there's, there's a tremendous amount of diversity just among the domestic chickens as well.

Tony Vega 31:56

But what about the hurricanes? Does Dr. Gaines research shed any light on that? Are they the reason why the population of chickens has exploded in the past few decades?

Eben Gering 32:05

We will probably never conclusively be able to say if it was the hurricanes that caused the expansion, the population increase of Kauai's feral chickens. And then if you ask people who live there, you'll find people that will say they don't need science, they were there, they saw it, and you know, they absolutely, they absolutely know that it happened. Well, it happened one way or the other, and that depends on who you ask.

Tony Vega 32:35

Sure.

Eben Gering 32:37

So thanks for asking, though about, you know, the scientific side of things. Here's what we can say. So first, we do have to acknowledge that domestic, domestic genes were present in the Kauai birds before those two major storms. We know that because naturalists observed and reported some morphological evidence of domestic genes in that gene pool. So if you see a bird with some white feathers or yellow legs, then you know that, that's not a pure red junglefowl gene pool, there's been some admixture between chickens and red junglefowl. And they do seem to love each other because most places where they come in contact, they readily interbreed, even within the native range of the junglefowl. And this is a big problem, because as you get more and more, you know, human population density, and more chickens, you've got more and more interbreeding, and we're sort of losing that, that original species because of the, the introduction of these domesticated genes. But here's the other thing. So we do know, also from some naturalist reports that a few decades ago, the birds on Kauai were reported to be more junglefowl-like, then they look to us. And I say they, I mean, they look to us when we take a careful look. So we're really looking at how often do we see traits that we know have a genetic basis and where if we see a chicken that looks a certain way, then we know it's carrying some domesticated genes. A really good example of this is the yellow legs I've mentioned several times. So there's just one gene in the whole chicken genome that, that will determine if a bird

has yellow legs or not. And no red junglefowl have yellow legs. That's a whole nother interesting story that

Tony Vega 34:50

Gray, I was reading.

Eben Gering 34:51

Yes. Yeah, they're, yes, they're sort of slate colored. So the gene that makes yellow legs was introduced during the domestication of the chicken from a different species called the grey junglefowl is sort of the next closest relative of the chicken and the red junglefowl. Okay, so we see, we know that we see a lot more domestic, domestic-like traits in the Kauai population now than was there a few decades ago. We also know that population grew exponentially after those hurricanes. And so, so those two bits of evidence, they don't prove that the hurricanes caused this influx of domestic genes into this sort of wild quiet, gene pool. But they're, they're at least consistent with that idea, which, which is also the one that, that we heard most often in speaking with Kauai residents about, about their chickens. So most people told us, well, chickens have always been here, but they increased dramatically after these storms. It would make sense, it would make sense to us that, you know, if you look at pictures of what Kauai looked like, in the aftermath of those storms, they were devastating and anybody who had some backyard chickens would be busy tending to other things, and this may create a situation where chickens now need to wander off and figure out how to fend for themselves. So that that could certainly catalyze a population of feral fowl. And the last, the very last thing I'll say on that, unless you know, you have more questions, is that there are some genetic tools that you can use to, to estimate the point at which two lineages began hybridizing. And people have developed these tools to study migration of human populations around our planet. And they do tend to coincide fairly well, in cases where there's some anthropological evidence to suggest when, you know, two populations met on Madagascar, or when they cross from, you know, this island to the next one. So those tools do seem to these these genetic analysis tools that are pretty new, they do seem to be working fairly well at estimating historical data exchanges of genes between populations. And we tried running those on the Kauai population. So this is something my collaborators working on and that, that we should be hopefully publishing sometime soon. But the estimate that came out of those analyses for the major episode of domestic feral admixture on Kauai, it does coincide pretty well with those storms. So I believe it was, you know, 30 to 50 generations or something in that in that arena. So, okay, so all our evidence suggests that there was some admixture that happened after the storms. Can we really say it was the hurricanes? I don't know.

Tony Vega 38:32

The research of Dr. Gering and other scientists has allowed us to better understand Kauai's chickens. But that's not where the story ends. So aside from simply understanding better where these birds possibly came from, you know, their, their genetic makeup, what would you say this research has to offer us in a broader sense?

Eben Gering 38:55

Oh, there's so many different things. I really do, I think it has so many, so many answers to that question. I would say for a general non scientific audience, to my mind, one of the foremost things is just calling people's attention to the fact that chickens didn't, we didn't just create chickens out of nothing. That these, these, you know, these were domesticated by humans from wild animals that, you know, they're the descendants of those animals still live in Asia today. And I think it's really important to know that given how much we rely on these animals for food for eggs and meat, it seems to me like a, like a sort of ethical or humanitarian duty to, to know just a little more about them. But in terms of, in terms of specific things we can, you know, we can get from this research program, well, I could, I could, I could mention a few. So, I also think that there's been so much research in the past into - well, there's been extensive research, and is extensive ongoing research into wild animals that live in wild places, and, and that's a wonderful thing we learned so much from those research programs. And then we have a lot of research in like agricultural settings where we're trying to figure out how to grow, you know, plumper pigs or healthier cows, things like that. But these feral animals, really, they live right in the middle, and people, people do, so ecologists sometimes study them to try to figure out how they're impacting wild animals. and this is a very important question. But it's just, it's just really interesting to me that, that science has, you know, basic science has largely ignored these animals, even though they're extremely numerous. It's, you know, there are, there are, there aren't a lot of places that you can go where there aren't feral animals. And so I think the more we can learn about, you know, whether and how this unique situation is having been shaped by domestication, and then going back into a wild environment, whether and how that makes your biology a little different from the biology, we know, from all our studies of other organisms, I think there's a lot of value in that. And, you know, that, that, we can get a lot more specific. So we can ask questions like, okay, so our poultry industry, you know, everybody is, most people have probably heard about bird flu, and about how concerned people are about, about this virus, perhaps jumping from domestic poultry and to humans, AND and OR about disease outbreaks and poultry, kind of, you know, wiping out farms and threatening our food supply. So how do you deal with that? Well, one thing you might think of first is, how does the chicken immune system work? How do chickens fight off disease? And are there things that we could, you know, that we could do to breed partiers sturdier, healthier chicken, chickens? Well, one way you could

do that is, you can think about these feral chickens as it's an evolutionary experiment, if you've thrown chickens into this complex environment where they're exposed to all kinds of new microbes that aren't, you know, present in factories or farms, because they're running through the underbrush, and they're interacting with all the animals and those landscapes and, and the fittest will survive and reproduce. And so, if you look at those chickens after enough generations have gone by, then the genes that are left in those birds are the ones that they're well suited to that environment, they can fight off the local pathogens they can tolerate. Whether it's the, you know, the high temperature of say that the drought if they're, they're over on the dry side of an island. So if we can characterize the genetic adaptations that are emerging in these feral animals, we can use them in production settings to make animals healthier and better adapted to different kinds of environmental conditions.

Tony Vega 43:25

It's pretty clear that Dr. Gering really has a special place in his heart for these chickens. And so I had a suspicion that maybe, just maybe, he might still have a few things to remind him of all that time he spent with the chickens of Kauai. Do you happen to have any like, chicken souvenirs, any artwork, anything from your time on Kauai?

Eben Gering 43:49

I do. Yeah. Did you, how did you know, how did you know that?

Tony Vega 43:54

I figured you might. (laughing)

Eben Gering 43:56

I mean, I love, so yeah, I love, I love the fact that these feral, these feral birds have become so integrated into the local Island culture of today. I think it's really neat. And, yeah, I have a whole, you know, a fairly large collection of refrigerator magnets that I've you know, collected and some of them are, you know, very serious, kind of celebrating the chicken, a lot of them are humorous, they have little, you know, the chickens are saying something funny, or carrying surfboards or whatever. And that's my main, that's my, you know, my main collection. I'm not really somebody who would otherwise you know, want to amass a giant collection of chicken refrigerator magnets, but when I see it, it just reminds me that, you know, these these birds have, they really have a place in this landscape and, and not just, not just the ecosystem, but the cultural ecosystem of the islands and that fascinates me.

Tony Vega 45:00

The 2015 article mentioned in this interview is titled "Mixed ancestry and admixture in Kauai's feral chickens." If you would like to read the full version of the article, or just learn more about Dr. Gering's research, please use the links provided in the show notes for this episode.

Tony Vega 45:17

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