

**From:** [AAMEDEN@hawaii.rr.com](mailto:AAMEDEN@hawaii.rr.com)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] Please stop  
**Date:** Wednesday, August 24, 2022 9:12:34 AM

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Please do not allow this totally psychotic idea to release mosquitoes on us!!!  
That is all.  
Mahalo

**From:** [ALOHA Festival](#)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] Agenda C. DIVISION OF FORESTRY AND WILDLIFE  
**Date:** Wednesday, August 24, 2022 7:57:26 AM

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Aloha!

Please stop supporting anything that is not "made by nature"! GMO anything is bad!

Stop playing God!

Don't support or propagandate anything that is Not Natural!

Injected mosquitoes ARE NOT NATURAL!

DO NOT PROMOTE OR ALLOW THAT!

We trust that you care about land and kids who don't want to inherit horrible problems that would happen if you promote them

Mahalo ♥

We are watching you

We tha People

Team at AlohaFestival

**From:** [arroya](#)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] AGENDA C DIVISION OF FORESTRY AND WILDLIFE  
**Date:** Wednesday, August 24, 2022 8:28:54 PM

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DECLINE THE INSERTION OF MOSQUITO VIDEOS-A PROMOTION FOR AN EXPERIMENT-THE "ISLAND OF PARADISE" HAWAII DOES NOT WELCOME IT, DOES NOT NEED IT, AND CAN DO WITHOUT IT. ENOUGH ALREADY!

- This experiment was done in Singapore and failed when **3 female mosquitos got out** and started reproducing. They had to **irradiate** them immediately. (Again, Hawaii has NO plan if anything goes wrong!)
- The bacterium the mosquitos are injected with has been shown to **ENHANCE West Nile Virus** (WNV) Infection in the Mosquito *Culex tarsalis*  
<https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0002965>

Sent with [Proton Mail](#) secure email.

**From:** [Margot Bogdonavich](#)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] Subject: Agenda C. DIVISION OF FORESTRY AND WILDLIFE  
**Date:** Tuesday, August 23, 2022 11:17:09 PM

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STOP THE PROPAGANDA! You don't have ANY studies that show if a female mosquito gets out, **she won't harm the birds you want to save!**

You are trying to get people to believe that mosquitoes injected with a bacterium that sterilizes eggs are safe and have NO studies that show this! **THAT IS FALSE**

**ADVERTISING!**

The Hawaii Agriculture

- Department HAS NO PLAN IN PLACE IF ANYTHING GOES
- WRONG and you want to continue promoting this MAD Science Experiment under the guise of protecting birds! OMG!!!!

Please stop the mosquito release & these videos. Don't be narrow minded, expand your thoughts if you can.

C. S. Jenkins

Ronjsusie@hotmail.com

Kailua Kona

**From:** [Rhaya](#)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] Testimony Against Promoting Mosquito Release  
**Date:** Tuesday, August 23, 2022 4:53:31 PM

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## Testimony Against Promoting Mosquito Release

PLEASE STOP THE PROPAGANDA saying that mosquito release is safe! You don't have ANY studies that show if a female mosquito gets out, she won't harm the birds you want to save!

**You are trying to get people to believe that mosquitoes injected with a bacterium that sterilizes eggs are safe and have NO studies that show this! THAT IS FALSE ADVERTISING!**

The **Hawaii Agriculture Department** HAS NO PLAN IN PLACE IF **ANYTHING** GOES WRONG.

Alisen Celestyne, Kapaa  
808-346-8857

**From:** [Summer Dien](#)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] Stop the propaganda with the mosquito videos!  
**Date:** Wednesday, August 24, 2022 7:48:47 AM

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I say NO to GMO mosquitos. Why are you playing God? Who gave you that right? Don't mess with Mother Nature. Just let it be.

- STOP THE PROPAGANDA! You don't have ANY studies that show if a female mosquito gets out, **she won't harm the birds you want to save!**
- How do you know it's the **mosquitos and NOT the mongoose** that are harming the bird population?
- **You are trying to get people to believe that mosquitoes injected with a bacterium that sterilizes eggs are safe and have NO studies that show this! THAT IS FALSE ADVERTISING!**
- The **Hawaii Agriculture Department HAS NO PLAN IN PLACE IF ANYTHING GOES WRONG** and you want to continue promoting this MAD Science Experiment under the guise of protecting birds! OMG!!!!

#### WHY WOLBACHIA INJECTED MOSQUITOES ARE DANGEROUS:

- Mosquitos **carry deadly diseases** for people and animals. They **MUST do Environmental Assessments AND A FULL Scope Environmental Impact Study** to make sure people are safe if females get out!
- The **Hawaii Agriculture Department has NO plan** in place if **anything goes wrong! They just have wishful thinking that nothing will. This is NOT Okay!**
- This experiment was done in Singapore and failed when **3 female mosquitos got out** and started reproducing. They had to **irradiate** them immediately. (Again, Hawaii has NO plan if anything goes wrong!)
- The bacterium the mosquitos are injected with has been shown to **ENHANCE West Nile Virus(WNV)** Infection in the Mosquito *Culex tarsalis* <https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0002965>
- Research has shown Wolbachia can **ENHANCE malaria parasite** infection in two genera of mosquitos. [19-21]. [https://downloads.regulations.gov/EPA-HQ-OPP-2015-0374-0018/attachment\\_1.pdf](https://downloads.regulations.gov/EPA-HQ-OPP-2015-0374-0018/attachment_1.pdf)
- This mosquito has been shown to **Create ANOTHER Species of Mosquito** through horizontal gene transfer. <https://bmccgenomics.biomedcentral.com/articles/10.1186/1471-2164-10-33>
- How do we know these mosquitos won't **make matters whose if a female gets out and bites the birds** they want to save. Do we know she won't sterilize them? NO!
- The **2020 study in BMC, "Wolbachia infection in wild mosquitos(Diptera: Culicidae): implications for transmission modes and host-endosymbiont associations in Singapore"** (Huicong Ding, Huiqing Yeo, Nalini Puniamoorthy) describes the **Potential for Wolbachia bacteria to SPREAD not only vertically through breeding, but horizontally through parasitism or proximity to infected individuals. Unexpected evolutionary events may also result** from using Wolbachia-based IIT!

Sent from Summer Dien's magical iPhone

**From:** [donna grabow](#)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] Lab Mosquitoes: Agenda C. DIVISION OF FORESTRY AND WILDLIFE  
**Date:** Wednesday, August 24, 2022 3:02:58 AM

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From: Donna Grabow  
82 Hoku St. Apt A Hilo, 96720

Agenda Item: **Agenda C. DIVISION OF FORESTRY AND WILDLIFE**

The Division of Forestry and Wildlife want to have a document written so they can work with the American Bird Conservancy to **keep producing videos that support releasing the mosquito injected** with the **Wolbachia bacterium under the guise that it's protecting birds**

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**My testimony:**

- The person(s) working above the Hawaii Dept. of Agriculture and Div. of Forestry & Wildlife, are trying to get the public to believe that mosquitoes injected with a bacterium that sterilizes eggs are **safe and have NO studies that show this!**
- There should be no promotional videos made about the the 'adjustification' to release lab mosquitoes.
- Please do not resort to false advertising.

**From:** [kanaloaleohano](#)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] Written testimony for Aug. 26, 2022, regarding Agenda Item "C."  
**Date:** Wednesday, August 24, 2022 12:24:20 PM  
**Attachments:** [LinksAndInfoOnAmericanBirdConservancy.pdf](#)

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It is undesirable to continue a relationship with an organization that has proven itself to be accepting donations AND INFLUENCE from non-ecological sources.

Please DISCONTINUE association with the American Bird Conservancy, for videos or for any other reason, so their POOR REPUTATION does not reflect on Hawai'i.

Until their papers for this year and last year are filed with the IRS and released, we do not know who is currently funding AND INFLUENCING their work.

I am in receipt of the information in the attached PDF document, WHICH ALSO IS INCLUDED AND PART OF THIS, MY WRITTEN TESTIMONY.

Please examine the document carefully and check the links as desired, to such respected organizations such as The Washington Post and Reuters.

1. The information in the attached document shows that the American Bird Conservancy only cares about threats to birds that are of interest to its funders.
2. The information in the attached document shows that the American Bird Conservancy engages in "scaremongering" and inflating threats to birds.
3. The information in the attached document shows that the American Bird Conservancy is "promulgating misleading and alarmist statistics on avian mortality".
4. The information in the attached document shows that the American Bird Conservancy is heavily involved in publicity to push its less-than-transparent agendas.
5. The information in the attached document shows that the American Bird Conservancy is not a safe, diverse, or inclusive place to work ("a cesspool of misogyny"), and there are "lack of financial oversight and accountability" and "problems with regulatory compliance", and "the enmity toward Audubon and other environmental groups just blows your mind".
6. The information in the attached document shows that the American Bird Conservancy not only takes money from anti-environmental organizations, it aligns with them against true environmentalists.



THIS ARTICLE GOES INTO DEPTH ABOUT A.B.C. PREVIOUSLY BEING A REASONABLE ORGANIZATION, WORKING WITH AUDUBON SOCIETY AND OTHER ENVIRONMENTAL ORGANIZATIONS -- UNTIL THEY STARTED TAKING MONEY FROM FOSSIL FUEL COMPANIES!!! -- WHO OF COURSE ARE AGAINST WIND POWER, AND SO A.B.C. THEN BECAME IN THE FOREFRONT OF SAYING WIND MACHINES KILL BIRDS ALTHOUGH MANY MORE ARE KILLED BY FLYING INTO WINDOWS:

<https://grist.org/energy/american-bird-conservancy-wind-energy-project-icebreaker/>

“Wagner and another attendee recalled being taken aback by the ABC representative’s aggressive stance. ‘He got up before me and proceeded to say that every single peer-reviewed study of wind, birds, and bats is essentially bullshit,’ Wagner recalled.”

“Later, a lifelong birder in the audience asked about ABC’s position on Ohio’s coal industry, which has polluted Lake Erie with enough mercury to threaten the viability of local loons and bald eagles. Wagner still remembers the ABC official’s response: ‘Coal is not our concern.’”

...

“Since then (PREVIOUSLY A.B.C. HAD WORKED WITH CONSERVATION GROUPS TO MAKE SURE

WIND MACHINES WOULD DO THE LEAST HARM TO BIRDS -- AFTER ALL, MORE ARE KILLED EACH YEAR BY AUTOMOBILES THAN WIND MACHINES), however, the organization quietly accepted at least \$1 million from fossil fuel interests and welcomed board members tied to dirty energy companies, according to its annual reports and Internal Revenue Service filings. **As other conservation groups have prioritized fighting climate change above all else, ABC has transformed into a particularly aggressive foe of wind energy.**”

“On occasion, ABC has stood arm-in-arm with the broader conservation community to [oppose wind projects](#) that pose [particularly severe threats](#) to local ecosystems. Yet for the preponderance of projects opposed by the organization, the birding group flies solo — **or aligns itself with anti-environmental forces.**”(EMPHASIS MINE)

“Take one of their very first wind fights a decade ago, which concerned the ambitious Cape Wind project in Massachusetts. While many conservationists supported the project, which was intended to be America’s first offshore wind farm, ABC aligned itself with the [Alliance to Protect Nantucket Sound](#) — **a group backed by the third, lesser-known Koch brother, William.** (EMPHASIS MINE) That project, which ignited fierce debate in the region, was eventually abandoned.”

...

“Caleb Gordon, an ornithologist ... found ABC to be unbending in its perspective on the project. He said that while most birding groups wanted to engage with the developer (OF THE WIND FARM), efforts to conduct bird observation with ABC officials were rebuffed. The few short meetings that ABC agreed to became confrontational, according to Gordon. **He accused ABC of promulgating misleading and alarmist statistics on avian mortality.**(GUESSING THEY ARE DOING THIS IN HAWAII AND NOW ARE PROBABLY BEING FUNDED BY GATES, AS THE LATEST INFO ONLINE ABOUT DONORS IS FROM 2020).”

“ABC’s current stance on climate change amounted to ‘uncertainty paralysis’ and (GORDON) called its online materials on the issue ‘appalling.’ What’s most striking, he said, is that as the science linking climate change to bird endangerment grows stronger, ABC’s stance on climate change has softened.”

“‘It struck me as a website that’s a good 10 to 15 years out of date,’ he said. ‘You compare it with any other environmental group I’ve looked at, and it’s way behind the curve.’”

“The exact reasons for this trend in the organization’s stance on wind are unclear, but it does appear to coincide with a **growing reliance on funding and personnel with origins in the fossil fuel industry.** over the last two decades. Between 2000 and 2004, ABC began **receiving**

**financial support from a slate of fossil fuel companies including the electricity company PPL Montana, Cascade Natural Gas, ExxonMobil, and ConocoPhillips.”**

2021 DONORS INCLUDE ConocoPhillips Company AT THE \$100,000+ LEVEL (THIS IS SELF-REPORTED INFO IN THE ANNUAL REPORT AND NOT OFFICIAL DATA FROM IRS FILINGS): [https://abcbirds.org/wp-content/uploads/2022/08/Impact-Report-2021\\_WEB.pdf](https://abcbirds.org/wp-content/uploads/2022/08/Impact-Report-2021_WEB.pdf)

<https://www.washingtonpost.com/climate-environment/interactive/2021/bird-names-racism-audubon/>  
HONOLULU PERSON FEATURED IN A  
NEWSPAPER ARTICLE ON "NON-DIVERSIFIED"  
FIELD:

“In Honolulu, ornithologist Olivia Wang is equally harsh. She regards the honorifics (NAMES) that birds carry with disdain.”

““They are a reminder that this field that I work in was primarily developed and shaped by people not like me, who probably would have viewed me as lesser,’ said Wang, an Asian American graduate

student at the University of Hawaii. “They are also a reminder of how Western ornithology, and natural exploration in general, was often tied to a colonialist mind-set of conquering and exploiting and claiming ownership of things rather than learning from the humans who were already part of the ecosystem and had been living alongside these birds for lifetimes.”

BELOW, THERE ARE THREE REVIEWS, RANGING FROM 2020, TO LAST MONTH FROM AN EMPLOYEE OF MORE THAN 3 YEARS, ON RECRUITING WEBSITE GLASSDOOR ON WHETHER A.B.C. WOULD BE A GOOD PLACE TO WORK (ALL VERY NEGATIVE), AND ONE NOTES THE CHANGE IN ATMOSPHERE WHEN THE CURRENT CEO CAME IN (NAMED "PARR"), WHO IS CALLED A “YES-MAN” TO DONORS:

<https://www.glassdoor.com/Reviews/American-Bird-Conservancy-Reviews-E1057227.htm>

“Former Employee, more than 3 years

**Would not recommend as a place to work**

Jul 14, 2022 - Anonymous Employee in The Plains, VA

**Pros**

A lot of great Conservation Scientists work here with great passion and drive, especially field staff who work remotely and independently from the main

offices.

The organization is founded on good intentions.

### **Cons**

The support staff are unappreciated and not given the authority they need to keep the organization on track. **Lack of financial oversight and accountability.**

The Board of Directors do not take an active role in oversight of the organization.

I saw **many decisions made based on Management's personal feelings: from choosing which projects to fund to staffing decisions (hiring/retaining/firing), that didn't support the best interests of the organization or it's mission.**

Staff who are internally promoted to positions of authority are not given additional training to ensure that they are capable or competent in their new roles, which leads to problems with regulatory compliance and managerial competence; but tenured employees are protected and not held accountable.

There was very high overturn for support staff: Administrative, Financial, Development/Fundraising and Communications staff. People were given more work than they could reasonably handle, but not appreciated or valued in the organization.”

and

“Former Employee

### **Creepy.**

Sep 19, 2020 - Administrator

### **Pros**

Some nice employees who work hard and try their best.

### **Cons**

A cesspool of misogyny and passive aggressive, insecure, self serving leadership. Sub-Parr from the top. I am just glad I didn't stay longer 'cause you only live once and this place can destroy you (and in fact, several employees got sick and died. I'm sure the work environment did not help.) You need to be a real sycophant and leave your principles at the door if you

plan to survive and thrive at ABC. Oh, and the enmity toward Audubon and other environmental groups just blows your mind. Creepy.”

and

“Former Employee, more than 1 year

### **SubParr: Only join if you are crazy about birds and/or have no other options**

Apr 23, 2020 - Anonymous Employee in The Plains, VA

#### **Pros**

Prior to the current ABC president, Mike Parr, becoming the organization's leader, this place was laser-focused on taking up the toughest challenges impacting birds. It had many flaws (no standards, old systems, favoritism, nepotism, lack of diversity and inclusion, low salaries, intense work hours, sexism), and, yet, the mission and passionate staff made this an impactful organization to work at.

#### **Cons**

Since Mike Parr became president, ABC has become an abysmal mess. The issues that existed prior to his tenure in this role, are now glaring gaps in an organization unwilling to change with the times. It's stuck in the 1950s (Sadly, it didn't even exist then.). The turnover is ridiculously high, and the morale is low in this toxic workplace. I can remember 2 to 3 employees resigning from the same position in a number of instances. Some staff only stay a few months before jumping ship. Many of their best employees have left in the past two years, and those that are still hanging on are desperately looking to leave.

The only staff that remains are those on the leadership team. They make 25 to 50% more than most staff, and **they are not accountable to anyone.** Some of them seemingly take sick and vacation leave in excess of their allotment, and push their work on junior staff. Why would they want the status quo to change and ruffle any feathers, when they are earning high salaries and, perhaps, not working as much?

The board is clueless or doesn't have the time/energy/interest it would take to change leadership and make ABC the organization it could be. The HR

department is dysfunctional/nonfunctional at best. When you report issues, they ask you to talk it out and make friends even in volatile/unsafe situations. They don't fire poor performers. Instead, the top staff continue to get more and more work piled on them. And the current president is mercurial on his best days, primarily cares about birdwatching and adding to his life list, is a yes man to donors/supporters, gets distracted by the latest shiny object/trend, is narcissistic, and is lacking in empathy and other social skills needed to be a leader.

### **Advice to Management**

Under the current leadership, nothing will change. I hope that ABC can continue to be impactful and relevant. But I have doubts about its future unless the board intervenes.”

IN THE BELOW REPORT, A.B.C. CONSPIRED WITH A USURPER TO GET A NEWLY DISCOVERED SPECIES NAMED AFTER HIMSELF, RATHER THAN USE THE TRUE DISCOVERER'S NAME CHOICE:

<https://birdingblogs.com/2011/gunnar/one-bird-two-names-bitter-feud-among-colombian-ornithologists>

Regalado 2011. News & Analysis:

Ornithology: Feathers are flying over Colombian bird name flap. *Science* 331: 1123-1124.

[www.sciencemag.org/content/331/6021/1123.summary](http://www.sciencemag.org/content/331/6021/1123.summary)

*“Last May, at the Washington, D.C., home of the Colombian ambassador, the American Bird Conservancy (ABC) and its partner in Colombia, Fundación ProAves, announced the*

discovery of a new species of Neotropical bird. ABC touted the feat as “remarkable” for being one of the first times a new species had been scientifically described from an individual captured, measured, photographed, and then released. For George Fenwick, head of ABC, it was a proud moment: The bird, Fenwick’s antpitta (*Grallaria fenwickorum*), was named in honor of his family.”

**“The problem with the announcement was that it made no mention of the bird’s actual discoverer,** a 28-year-old former employee of ProAves named Diego Carantón, and the two preserved specimens he had already collected. How Carantón, his specimens, and the name he had chosen – *Grallaria urraoensis* – came to be omitted from the taxonomic record is generating bitter debate between Colombia’s leading university ornithologists and ProAves, the country’s best-known private conservation organization, over scientific standards and credit for new discoveries.”

HERE, A LONDON PUBLICATION REPORTS A PERSON, WHO BOTH TEACHES AT CORNELL AND IS PART OF THE A.B.C. ORGANIZATION, INFLATED NUMBERS AND USED IRRELEVANT INFORMATION:

<https://www.dailymail.co.uk/news/article-7518519/Scientific-study-claims-loss-3-BILLION-birds-1970-accused-scaremongering.html>

# **“Scientific study that claimed bird population in North American dropped by THREE BILLION since 1970 is accused of scaremongering**

- Last week, researchers from Cornell University published study in Science
- Study claimed North American bird population fell by nearly 3 billion since 1970
- But experts say that news stories about study misleadingly predict 'apocalypse'
- Ecologists note that most of population decline came from abundant species
- Two declining species - starling and sparrow - are non-native European birds “

By [ARIEL ZILBER FOR DAILYMAIL.COM](#) and [REUTERS](#)

**PUBLISHED:** 18:45 EDT, 29 September 2019 | **UPDATED:** 00:30 EDT, 30 September 2019

“The study’s lead author, Ken Rosenberg, is an applied conservation scientist at the Cornell Lab of Ornithology and the American Bird Conservancy.”

BELOW IS LINK TO AN ARTICLE THAT NOT ONLY CONFIRMS THE SCAREMONGERING MENTIONED BY THE LONDON DailyMail, BUT GOES INTO DETAIL ABOUT THE HUGE PUBLICITY CAMPAIGN MOUNTED BY A.B.C. AND KEN ROSENBERG TO PUSH THEIR POINT OF VIEW:  
<https://www.motherjones.com/environment/2019/09/new-study-on-bird-loss-scientists/>

VARIOUS FACTS ON A.B.C. THROUGH 2020 (ONLY) CAN BE FOUND AT: <https://projects.propublica.org/nonprofits/organizations/521501259>

**From:** [Tina Lia](#)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] Testimony: 8/26/22 BLNR Meeting  
**Date:** Wednesday, August 24, 2022 6:59:22 PM

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Testimony: Tina Lia  
Board of Land and Natural Resources  
Meeting 8/26/22 9:00am

Agenda Item: C. DIVISION OF FORESTRY AND WILDLIFE 1. Request for delegation of authority to the Chairperson to enter into a Memorandum of Agreement with American Bird Conservancy for Video Production Services related to the Birds Not Mosquitoes partnership.

## **Wolbachia Mosquitoes in Hawaii: Unsettled Science (Part 2)**

On June 28, 2022, the Hawaii Board of Agriculture approved the addition of three mosquitoes to the List of Restricted Animals in anticipation of the planned biopesticide IIT experiment in Hawaii's native bird habitats. The initial process for bringing these mosquitoes into the state has also begun, with the board approving the first species – the Southern House Mosquito (*Culex quinquefasciatus*), inoculated with strains of Wolbachia bacteria – for importation and immediate field release by permit.<sup>1</sup>

The project is called “Mosquito Control Research Using Wolbachia-based Incompatible Insect Technique” and is promoted as a population control effort to save Hawaii's endangered native birds. The multi-agency partnership *Birds, Not Mosquitoes*, a steering committee formed in 2017 and comprised of state, federal, and non-governmental organizations, is coordinating the plan. Prior to the June 28th meeting, an exemption notice was signed by the Hawaii Board of Land and Natural Resources Chairperson Suzanne D. Case, stating that the Department of Land and Natural Resources (one of the lead agencies in the partnership) declares that this project will likely have minimum or no significant impact on the environment and is therefore exempt from the preparation of an environmental assessment.

With strong evidence of serious risks to public health and to the native birds targeted by this project, island residents are challenging the DLNR's assertion and demanding a full scope Environmental Impact Study. Recent testimony shows that over 75% of the public is opposed to rushing forward with this experimental plan. Additional questions regarding invasive species control and conflicts of interest have been left unanswered by the state, and the task of researching and evaluating safety concerns now falls on the people. Our findings are alarming.

Of primary concern is the potential for increased pathogen infection due to non-sexual horizontal transmission of the introduced Wolbachia strains between the introduced biopesticide mosquitoes and the existing “wild” mosquitoes. Multiple factors are involved here, but first let's look at the three mosquito species planned for import into Hawaii and just a few of the diseases they are known to transmit:

- The Southern House Mosquito (*Culex quinquefasciatus*) transmits avian malaria parasitic disease to birds and West Nile virus to both birds and humans
- The Asian Tiger Mosquito (*Aedes albopictus*) transmits both dengue fever and Zika virus to humans

- The Yellow Fever Mosquito (*Aedes aegypti*) transmits dengue fever and yellow fever to humans

Horizontal transmission is defined as the spread of an infectious agent from one group or individual to another, directly or indirectly. In the case of the host arthropods (insects) and the infectious agent of Wolbachia bacteria, the horizontal transmission referenced here would be non-sexual. Imported Wolbachia bacterium strains involved in this project include wAlbA, wAlbB, and wPip4. These newly introduced strains (referred to here as “X”) are not currently present within the corresponding *Culex quinquefasciatus* species of Hawaii’s established mosquito population.

Tropical disease expert Dr. Lorrin Pang agreed to speak with me as a private citizen to explain more about horizontal spread of disease and the risks involved with this project. Pang has authored over 75 publications in peer-reviewed medical journals covering a broad range of studies such as malaria, dengue, rabies, rat lungworm, and COVID. He’s been an advisor and voting member of the U.S. Congress Medical Research Program for the past several years, serving on committees for infectious diseases – many of which are mosquito-borne. From 1985-2005, he worked with the WHO and Walter Reed Institute’s Malaria Program, focusing on global malaria control efforts through interventions combining diagnostics, chemotherapeutics, vector control, and vaccine development. As a public health leader on the islands, he has mitigated mosquito-borne illnesses – including dengue and Zika – for over two decades. Pang was honored for his life-saving intervention in Hawaii’s dengue fever outbreak.

Dr. Pang has been compiling studies documenting horizontal Wolbachia bacterial spread, and he’s concerned about the potential for significant adverse outcomes of the state’s proposal:

“The intent to save rare birds is sound. If the project goes as planned, this would be a valuable tool for future interventions. However, with new life forms coming to the islands, there is too much potential for unexpected, dangerous, irreversible ‘evolutionary’ events. This is especially true when the new organisms cannot be contained to their target ecosystem. Already there are published papers pointing out the real threat of horizontal spread of the novel Wolbachia beyond the male *Culex* mosquito. The papers cover two general areas – the widespread detection of Wolbachia across so many diverse types of insects, and more recently, the growing number of reports of mechanisms of how this might occur. First, we all must agree that unintended horizontal spread of Wpip4 (imported strain) to, say, female *Culex*, *Aedes* mosquitoes (human disease vectors), or other insect vectors of diseases would be a catastrophe, and probably irreversible. Hawaii has a bad history of invasive species entering and spreading unabated, including their spread of infectious diseases.

Proponents may be right that this intervention will save the native birds in the short-term, but long-term consequences to other island ecologies and to these same native birds may ultimately be detrimental. When one realizes the latter, the damage may be impossible to recall or repair, like the effect we’ve seen with so many other invasive species in Hawaii.”

The safety assurances of the state’s biopesticide project are based heavily on the premise that only male mosquitoes will be released. Because the males are infected with an incompatible bacteria strain, when they mate with existing wild females, the offspring are not viable.

However, Dr. Pang points to a more recent study out of Singapore describing Wolbachia bacteria strain “evolutionary associations” between mosquito hosts. The results of this mechanism widespread into diverse insect populations are not known. It may start with a few horizontal transfers to female mosquitoes. After that, the mating Wolbachia-X-compatible pair will quickly produce viable X offspring and spread the X bacteria strain (the term for this is “sweep”). If that were to happen here, the full capacity of those offspring to transmit disease would be unknown. This type of spread and sweep could also affect other insects, not just the targeted mosquito.

The combination of horizontal and vertical spread dramatically contradicts the state’s safety narrative. While the potential for accidental misidentification and release of lab-reared X-infected females (who bite and breed) has already been downplayed, the possibility of unintentionally producing these females in the wild has not been addressed at all. As Pang puts it,

“It is enough to say that the new Wolbachia strain can spread horizontally as a life form to other mosquitos (say Aedes, the vectors of human disease) and perhaps create that Wolbachia female Culex which everyone is bending over backwards to avoid via lab contamination.”

Dr. Pang further points out that there is a big difference between the standard Sterile Insect Technique (SIT) strategies used in the past that were based on radiation or chemicals, and the relatively new Incompatible Insect Technique (IIT). The mathematical models may be similar for estimating threshold criteria to affect mosquito population dynamics, but standard methods of sterility are not bacterial life forms that might escape horizontally and amplify in other ecological niches. According to Pang,

“While sterility models can predict the thresholds needed to exterminate a species (in this case insects), the radiation sterility factor (standard SIT) does not behave the same as a life form (i.e., Wpip4 Wolbachia bacteria). There may be different modeling between radiation and Wolbachia ‘sterility’ for the male mosquitoes, depending on male mosquito fitness – but more importantly, for the unintended female Culex to which the Wolbachia X spreads horizontally. How is this supposed to be self-contained? Horizontal spread has the potential to be a disaster that cannot be recalled. The bacterium is a life form, and you might not be able to turn back the clock by simply shutting off the male mosquito ‘fountains.’ ”

The evidence of horizontal spread of Wolbachia shows that the bacteria go not only to sexual cells, but also to somatic cells (non-sexual cells of the body). Wolbachia can also live outside of intra-cellular systems for several months.<sup>3</sup> Dr. Pang emphasizes two additional studies documenting widespread horizontal transmission of Wolbachia. The first focuses on predatory wasps spreading the bacteria through contaminated mouth parts when feeding serially on target insects such as aphids<sup>4</sup>. Pang calls for more research into which predators, like the damselfly and dragonfly, sequentially feed on both male and female mosquitoes. This scenario might play out in either the predator of adults feeding on adult mosquitoes (X-infected and wild), or the X-infected predator of larva feeding on wild mosquito larva in common breeding sites. The second study looks at ant colonies spreading Wolbachia through the gastrointestinal (GI) tract when the ants feed on their fungus gardens.<sup>3</sup> Pang asks an important question, “What about shared sugar feeding sites for X-infected male and wild adult male and female mosquitoes?” The sparser the sugar sites, the more communal interaction they will have. Dr.

Pang finds these studies of horizontal transfer across species of insects worrisome, and says, “Even if this project achieved miraculous blocking of avian malaria to the native birds, what else would it do?”

To complicate matters more, the Wolbachia bacteria itself is parasitic, manipulating the reproductive biology of the host to increase its own transmission. Parasitic organisms can also alter the behavior of the hosts they live inside, and we just don’t know how this might play out in our native bird habitats. Will the X-infected mosquitoes or their offspring be capable of moving up to even higher elevations? Would they be more aggressive? How would increased pathogen infection and elevated capacity for disease transmission factor into these scenarios?

Consider the example posed by the article “Parasites brainwash grasshoppers into death dive,”<sup>25</sup> where a parasitic worm brainwashes the grasshopper host it invades to jump into water and commit suicide. The parasite accomplishes this by chemically influencing the grasshopper’s brain, producing proteins which directly and indirectly affect the host’s central nervous system. This causes an altering of the grasshopper’s behavior so that it acts in a way it never usually would. Other parasites are noted as manipulators of their hosts’ behavior, including “enslaver” fungi that make their insect hosts die perched in a position that favors the dispersal of spores by the wind. It is widely believed that Wolbachia bacteria is such a parasite (intracellular) that modifies the mosquito host’s behaviors in ways we are only now beginning to understand.

There are far too many unknowns here, and this research project has the very real potential of further endangering Hawaii’s native bird populations – possibly even leading to their extinction and the extinction of native birds not currently threatened. Why the state would choose to proceed with an experimental population control technique with limited background information when there are alternatives available with decades of study behind them is unclear at this point. Supporters of this proposal seem to have good intentions with their focus on mosquito control to save the birds, but there appears to be a lack of awareness about the serious risks posed by horizontal transmission of the Wolbachia X-strain bacteria and the resulting consequences of that spread.

Hawaii is united in our support for conservation of the native birds that are vital to honoring and preserving the culture, history, and natural environment of the islands. This biopesticide IIT experiment is not the answer. With the understanding of the multiple dangers posed to our ecosystems, native birds, and public health, it is now time for all of the agencies involved in this plan to agree that it cannot be rushed forward. As one public testifier so clearly stated, “Hawaii is not a petri dish.” The public demands a full scope Environmental Impact Study. We will not allow the state to recklessly sidestep that crucial process.

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(End of Part 2)

## References:

1. Board of Agriculture Meeting Agenda: Items IV.C.1 and IV.C.2 (06/28/2022) <https://hdoa.hawaii.gov/wp-content/uploads/2022/06/06-28-22-AGENDA.pdf>
2. “Wolbachia infection in wild mosquitoes (Diptera: Culicidae): implications for

transmission modes and host-endosymbiont associations in Singapore” – Huicong Ding, Huiqing Yeo, Nalini Puniamoorthy (BMC, 12/09/2020)

<https://parasitesandvectors.biomedcentral.com/articles/10.1186/s13071-020-04466-8>

3. “Wolbachia Horizontal Transmission Events in Ants: What Do We Know and What Can We Learn?” – Sarah J. A. Tolley, Peter Nonacs, Panagiotis Sapountzis (Frontiers in Microbiology, 03/06/2019)

<https://www.frontiersin.org/articles/10.3389/fmicb.2019.00296/full>

4. “The Intracellular Bacterium Wolbachia Uses Parasitoid Wasps as Phoretic Vectors for Efficient Horizontal Transmission” – Muhammad Z. Ahmed, Shao-Jian Li, Xia Xue, Xiang-Jie Yin, Shun-Xiang Ren, Francis M. Jiggins, Jaco M. Greeff, Bao-Li Qiu (National Center for Biotechnology Information, National Library of Medicine, 02/12/2015) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4347858/>

5. “Parasites brainwash grasshoppers into death dive” – Shaoni Bhattacharya (New Scientist, 08/31/2005) <https://www.newscientist.com/article/dn7927-parasites-brainwash-grasshoppers-into-death-dive/>

### **Additional Reading:**

“GENETIC DIVERSITY OF WOLBACHIA ENDOSYMBIONTS IN CULEX QUINQUEFASCIATUS FROM HAWAII, MIDWAY ATOLL AND AMERICAN SAMOA” – Carter T. Atkinson, William Watcher-Weatherwax, Dennis A. LaPointe (Hawaii Cooperative Studies Unit, UH at Hilo, 02/2016)

<https://dspace.lib.hawaii.edu/bitstream/10790/2671/TR074CarterWolbachia.pdf>

“Infection of New- and Old-World *Aedes albopictus* (Diptera: Culicidae) by the Intracellular Parasite Wolbachia: Implications for Host Mitochondrial DNA Evolution” – Peter Armbruster, William E. Damsky, Jr., Rosanna Giordano, Josephine Birungi, Leonard E. Munstermann, Jan E. Conn (Journal of Medical Entomology, 05/01/2003) <https://academic.oup.com/jme/article/40/3/356/877101>

“Wolbachia” – Karine Prevot (The Embryo Project Encyclopedia, 01/29/2015) <https://embryo.asu.edu/pages/wolbachia>

“Sugar feeding patterns of New York *Aedes albopictus* mosquitoes are affected by saturation deficit, flowers, and host seeking” – Kara Fikrig, Sonile Peck, Peter Deckerman, Sharon Dang, Kimberly St Fleur, Henry Goldsmith, Sophia Qu, Hannah Rosenthal, Laura C. Harrington (PLOS Neglected Tropical Diseases, 10/26/2020) <https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0008244#:~:text=Sugar%20also%20may%20enhance%20male,%2D seeking%20behavior%20%5B20%5D>

“Plant-mediated interspecific horizontal transmission of an intracellular symbiont in insects” – Elena Gonella, Massimo Pajoro, Massimo Marzorati, Elena Crotti, Mauro Mandrioli, Marianna Pontini, Daniela Bulgari, Ilaria Negri, Luciano Sacchi, Bessem Chouaia, Daniele Daffonchio, Alberto Alma (Nature, Scientific Reports, 11/13/2015) <https://www.nature.com/articles/srep15811>

“Wolbachia Associations with Insects: Winning or Losing Against a Master Manipulator” – Claudia C. Correa, J. W. O. Ballard (Frontiers in Ecology and Evolution, 01/19/2016) <https://www.frontiersin.org/articles/10.3389/fevo.2015.00153/full>

From: [Chuck Lyons](#)  
To: [DNR, BNR, Testimony](#)  
Subject: [EXTERNAL] Birds, Not Mosquitoes  
Date: Tuesday, August 23, 2022 5:18:05 PM

Aloha,

Not sure why we need to venture into the mosquito breeding business, particularly after two years of COVID-19 impacts caused by messing with nature.

Birds, Not Mosquitos sounds like a plan with good intentions, but there are too many 'shoulds', and the use of a misleading human benefit of this plan, by including mosquitoes carrying diseases, like Dengue, etc. Has it affected us in Hawaii? From <https://health.hawaii.gov/docd/disease-types/mosquito-transmitted/>

## Number of confirmed cases during 2022

As of August 1st, 2022 (Case counts will be updated on the first working day of each month)

| Arbovirus ↕ | Total Number of Cases ↕ |
|-------------|-------------------------|
| Dengue      | 1                       |
| Chikungunya | 0                       |
| Zika        | 0                       |

## Number of confirmed cases in past 3 years

| Arbovirus ↕ | 2019 ↕ | 2020 ↕ | 2021 ↕ |
|-------------|--------|--------|--------|
| Dengue      | 14     | 5      | 0      |
| Chikungunya | 2      | 0      | 0      |
| Zika        | 0      | 0      | 0      |

Give it more time, collect real world data, provide a detailed blackout plan, and we can revisit this in the future.

Thanks,

Chuck Lyons  
808.365.3355

**From:** [margo margo](#)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] Subject: Agenda C. DIVISION OF FORESTRY AND WILDLIFE  
**Date:** Wednesday, August 24, 2022 7:00:29 PM

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I am writing to express my opposition to the Wolbachia Bacterium mosquito experiment you are planning for the island of Hawaii.

As much as I would love see the population of mosquitoes wiped out or diminished, I don't believe this plan has enough scientific proof to warrant the possible harm it can cause.

What I would like to know is who is benefitting financially from this proposed absurdity and why did one of the members abstain from voting at the meeting I watched a replay of. I didn't get her name, it was a women. What is her connection to this proposal?

I feel a level of transparency that has not been met, is an important element of this proposal.

I also feel that everyone that votes for it should be held personally accountable if anyone is harmed by this experiment.

Take your Wolbachia Bacterium infected mosquitoes to an uninhabited island before you start exposing an unwitting population of island residents to your foolish unscientifically proven experiment, please.

Sincerely,

Ella Powell  
Hilo resident

**From:** [Halina Ngo](#)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] Agenda: C Division of Forestry and Wildlife  
**Date:** Tuesday, August 23, 2022 7:51:18 PM

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Please, recognize who is pushing this incomprehensible action on us and your my children... and why? And

- STOP THE paid PROPAGANDA! You don't have ANY studies that show if a female mosquito gets out, she won't harm the birds you want to save!
- **You are trying to get people to believe that mosquitoes injected with a bacterium that sterilizes eggs are safe and have NO studies that show this! THAT IS FALSE ADVERTISING!**
- The **Hawaii Agriculture Department** HAS NO PLAN IN PLACE IF **ANYTHING** GOES WRONG and you want to continue promoting this MAD Science Experiment under the guise of protecting birds! OMG!!!!

#### WHY WOLBACHIA INJECTED MOSQUITOES ARE DANGEROUS:

- Mosquitos carry deadly diseases for people and animals. They **MUST do Environmental Assessments AND A FULL Scope Environmental Impact Study** to make sure people are safe if females get out!
- The **Hawaii Agriculture Department** has **NO plan** in place if **anything goes wrong!** They just have wishful thinking that nothing will. This is **NOT Okay!**
- This experiment was done in Singapore and failed when 3 female mosquitos got out and started reproducing. They had to **irradiate** them immediately. (Again, Hawaii has NO plan if anything goes wrong!)
- The bacterium the mosquitos are injected with has been shown to **ENHANCE West Nile Virus (WNV) Infection** in the Mosquito *Culex tarsalis* <https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0002965>
- Research has shown Wolbachia can **ENHANCE malaria parasite** infection in two genera of mosquitos. [19-21]. [https://downloads.regulations.gov/EPA-HQ-OPP-2015-0374-0018/attachment\\_1.pdf](https://downloads.regulations.gov/EPA-HQ-OPP-2015-0374-0018/attachment_1.pdf)
- This mosquito has been shown to Create **ANOTHER** Species of Mosquito through horizontal gene transfer. <https://bmcbgenomics.biomedcentral.com/articles/10.1186/1471-2164-10-33>
- How do we know these mosquitos won't **make matters worse** if a **female gets out** and bites the birds they want to save. Do we know she won't sterilize them? NO!
- The **2020 study in BMC**, "**Wolbachia infection in wild mosquitoes**(Diptera: Culicidae): implications for transmission modes and host-endosymbiont associations in Singapore" (Huicong Ding, Huiqing Yeo, Nalini Puniamoorthy) describes the **Potential for Wolbachia bacteria to SPREAD not only vertically through breeding, but horizontally through parasitism or proximity to infected individuals.** Unexpected evolutionary events may also result from using Wolbachia-based IIT!

Thank you,  
Elizabeth

**From:** [Steve O'Neill](#)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] Bird Conservancy  
**Date:** Wednesday, August 24, 2022 11:13:26 AM

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Division Of forestry and wildlife

I am writing concerning the program with The American Bird Conservancy to produce films to support the GMO mosquito program. I am strongly against this program and any other action to produce GMO mosquitoes. To gamble with the health of our society is not a good thing. PLEASE stop this !

Regards, Steve and Linda O'Neill

**From:** [mari pereira](#)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] QUESTIONS—WRITTEN TESTIMONY  
**Date:** Wednesday, August 24, 2022 11:58:58 PM

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I would like these questions answered:

\*WHERE is the proof that  
mosquitos??  
stray cats???  
are harming particular birds?

\*Which particular birds?

\*Predators to any birds—mongoose, hawks, owls, other birds, fire ants, dogs, people. Studies done on these?

\*Why were mongoose brought to HI?

\*How did the mongoose population explode in HI?

\*How did the koki frogs allowed to invade HI?

\*How did the koki frog population explode in HI?

\*How did the horrible fire ants allowed to invade HI?

\*How did the fire ant population explode in HI?

\*What are the names of all those involved in this mosquito proposal power grab?

\*What are the documented qualifications,  
the documented education,  
the documented experiences involving this proposed action with mosquitos  
by ALL THOSE INVOLVED WITH THIS PUSH?

\*Where are the studies done on this proposal?

\*The results of the studies?

\*When were the studies done?

\*Who did the studies?

\*Why were the studies done?

\*Where were the studies done?

\*Were any humans, animals, plants killed, diseased by this proposed experiments?

\*What are all those involved in this power grab involving mosquitos

—receiving from this experiment—How much money?

Favors? Jobs? Etc Etc

\*How much is this experiment costing the tax payers of HI? For how long?

\*How has this experiment on the people of Hawaii been advertised to the people of HI?

\*What if something goes wrong with this experiment done on the people of HI?

Any treatments for possible immediate physical harm? Physical harm one, two, five, 10, 30 years done the road?

\*What if a law suit is proposed against this asinine careless reckless experiment?

PLEASE ANSWER THESE QUESTIONS

mari pereira

**From:** [Apuvo Sutherland](#)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] Gmo mosquitos  
**Date:** Thursday, August 25, 2022 8:47:47 AM

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to whom it may concern,  
this is a travesty to introduce gmo mosquitos into our aina...we have no idea how it will impact our environment...at least 75% of the people oppose this and yet you want to move forward with you false propaganda...this is not your land and animals and people to make potentially sick!  
you must stop this immediately!  
you have no right to bring in untested anti environmental experiments and put out lies about it!!!  
STOP NOW!!!

taryn sutherland

**From:** [Sheila Walker](#)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] Agenda C Division of Forestry and Wildlife  
**Date:** Wednesday, August 24, 2022 6:34:41 AM

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I'm opposed to the release and cultivation of super mosquitoes!

Stop injecting them into our population. They are harmful to humans!

NO MOSQUITOES! NO MATTER WHAT!

Thank you,  
Sheila Walker  
786-774-1502

**From:** [Joanna Weber](#)  
**To:** [DLNR.BLNR.Testimony](#)  
**Subject:** [EXTERNAL] Agenda C. DIVISION OF FORESTRY AND WILDLIFE  
**Date:** Tuesday, August 23, 2022 7:40:02 PM

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ALOHA

Adding another invasive species, especially one which can harm humans, is not acceptable for the people of HAWAII!

There are no studies that show, if a female mosquito gets out, she won't harm the birds you want to save! So, please, stop the propaganda.

Trying to get people to believe that mosquitoes injected with a bacterium which sterilizes eggs are safe and having no studies which prove this, is false propaganda.

The Hawaii Agriculture Department HAS NO PLAN IN PLACE IF ANYTHING GOES WRONG. Nevertheless you continue promoting this one-sided science experiment under the guise of protecting birds!

This is shameful and not in correspondence to your political mandate.

Please, **incorporate independent, and *not* corporation-driven or interest-driven research to arrive at a human-oriented decision.**

Please, consider and respect the information below:

#### **WHY WOLBACHIA INJECTED MOSQUITOES ARE DANGEROUS:**

- Mosquitos **carry deadly diseases** for people and animals.  
**Environmental Assessments plus a Full Scope Environmental Impact Study must be conducted** to make sure people are safe if females get out!
- The **Hawaii Agriculture Department has no plan** in place if **anything goes wrong! Wishful thinking that nothing will go wrong is in no way sufficient.**
- This experiment was done in Singapore and failed when 3 female mosquitos got out and started reproducing. They had to **irradiate** them immediately. (Again, Hawaii has no plan if anything goes wrong!)
- The bacterium the mosquitos are injected with has been shown to **ENHANCE West Nile Virus** (WNV) Infection in the Mosquito *Culex tarsalis* <https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0002965>
- Research has shown Wolbachia can **ENHANCE malaria parasite** infection in two genera of mosquitos. [19-21].  
[https://downloads.regulations.gov/EPA-HQ-OPP-2015-0374-0018/attachment\\_1.pdf](https://downloads.regulations.gov/EPA-HQ-OPP-2015-0374-0018/attachment_1.pdf)
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ALOHA AND MAHALO,  
JOANNA WEBER  
75-5660 Kopiko Street, Suite C7 #106  
Kailua-Kona, Hawaii 96740