

From: [Tina Lia](#)
To: [DLNR.BLNR.Testimony](#)
Subject: [EXTERNAL] BLNR Meeting 10/13/23 9:15am Testimony Agenda Item C1: Oppose
Date: Wednesday, October 11, 2023 7:41:54 PM
Attachments: [2023_0508_Hawaii_Unites_and_Lia_v_BLNR_and_DLNR.pdf](#)

RE: BLNR Meeting 10/13/23 9:15am Testimony Agenda Item C1: Oppose

Hawai'i Unites is a nonprofit organization dedicated to the conservation and protection of our environment and natural resources. We are opposed to the BLNR's 10/13/23 agenda item C1 "DOFAW Request approval of Final Environmental Assessment (FEA) and Authorization for the Chairperson to issue a Finding of No Significant Impact for the 'Use of *Wolbachia*-Based Incompatible Insect technique for the suppression of non-native southern house mosquito populations on Kauai.'" We have an active case in environmental court seeking a ruling to require an Environmental Impact Statement (EIS) for these mosquito releases on Maui. We are in the process of a hearing for a Temporary Restraining Order and Preliminary Injunction to stop the release of bacteria-infected mosquitoes on East Maui. This Kaua'i project cannot be allowed to move forward while the need for further study of the serious risks of these mosquitoes is still being litigated in court.

Concerns about this plan have not been adequately addressed. Southern house mosquitoes transmit human diseases, and pathogen screenings are not being disclosed. Female mosquitoes that bite, breed, and spread disease will be released. EPA guidelines allow for the release of one female for every 250,000 males. Peer-reviewed studies have shown *Wolbachia* bacteria to increase pathogen infection in mosquitoes and to cause mosquitoes to become more capable of transmitting avian malaria and West Nile virus (bird and human). This project has the potential to cause the extinction of the native birds it is meant to protect, and it could impact the health of the people.

The Kaua'i FEA specifically states that "monitoring the response of forests bird to mosquito suppression via the Incompatible Insect Technique (IIT) mosquito control is outside the scope of the proposed action of this EA." There is no intention by *Birds, Not Mosquitoes* of taking responsibility for the outcome of this mosquito release plan on the birds that are supposed to be the entire focus of this project. This is outrageous. If monitoring the response of endangered birds to the release of bacteria-infected mosquitoes is out of the scope of the proposed action, there's clearly no intention of monitoring the response of people who may be impacted.

This planned project is a dangerous experiment on all life on these islands. These lab-infected mosquitoes come with additional risks, including horizontal transmission of the introduced bacteria strain, irreversible evolutionary events, population replacement, creation of lab-strain females in the wild, horizontal gene transfer, and biopesticide wind drift. Scientific studies document these concerns. The risk of wildland fires caused by aircraft and drones used in the project is also documented in the FEA.

Per the U.S. Department of the Interior Strategy, “*Wolbachia* IIT is a novel tool for conservation purposes and its degree of efficacy in remote forest landscapes is unknown.” This project is an experiment on Hawaii’s people, wildlife, and ‘āina. The outcome is admittedly unknown. The 59,204-acre Kaua’i project area is almost 17% of the entire island, and this would be the second largest *Wolbachia* mosquito release of any kind globally to date (Maui would be the largest at 64,666 acres). There is no prior documented use of southern house mosquitoes for *Wolbachia* stand-alone field release. This plan could be an irreversible catastrophe for the island’s fragile ecosystems.

Diseases that southern house mosquitoes transmit to humans, birds, and other animals include avian malaria, avian pox, heartworm, elephantiasis, West Nile virus, Western equine encephalitis, and St. Louis encephalitis. These mosquitoes are also a potential vector of Zika virus. *Wolbachia* is a complicated and potentially dangerous bacteria. Strains of *Wolbachia* in parasitic worms play a role in elephantiasis, heartworm, and river blindness. Assertions of no human health risks are based on unsound science discredited by the EPA. The FEA for Kaua’i continues to mislead the people about multiple issues, including the introduction of foreign bacteria to the islands. The agencies involved have also failed to assure that there is informed consent of the people of Kaua’i for the release of human disease vectors on their island home.

The FEA’s Cultural Impact Assessment interview transcripts reveal a startling admission:

“BD: So do you guys have a plan to have those males [mosquitoes] removed incase it’s not successful? Or if it has a negative impact on some other species?”

WT: I’m not too sure. That’s a good point. I can ask that question and get back to you on that.”

No mitigation plan has been presented for the unintended consequences of this project. The FEA also fails to address any of tropical disease and vector expert Dr. Lorrin Pang’s specific concerns about the risks of these mosquito releases. Dr. Pang’s background information, concerns, and alternatives are detailed in our [TRO and preliminary injunction](#) court filing (page 372-387). Pang has decades of experience working in the field of tropical disease globally. He has authored close to eighty peer-reviewed articles, over forty of which are focused on mosquito-borne illness. Where are the studies addressing the information he has brought to these agencies’ attention? Horizontal transmission, math models, wind drift of mosquitoes, superinfection, increased pathogen infection and disease-spreading capability, experimentation – these mechanisms all interact with each other and need to be studied both separately and in combination. Further, why have his alternative approaches for mitigating avian malaria not been considered?

There are no documented biosecurity protocols for these mosquitoes, and pathogen screenings are unknown. Our organization filed a FOIA request with the EPA for the Data Evaluation Record (DER) for these biopesticide mosquitoes, including a

confidential attachment. That DER document containing a full review of the manufacturing process, including testing for relevant pathogens, has been withheld from the public and was not included in the FOIA document received from the EPA. This is unacceptable. There should be complete transparency with the details of this bacteria-infected disease vector product that is planned for mass release on our islands.

Who will take responsibility if something goes wrong – the federal government, the State of Hawaii, agency partners, private landowners? The scope, risks, and experimental nature of this plan require a detailed EIS. Safer alternatives haven't been considered. Conflicts of interest haven't been addressed. The University of Hawaii and USGS disclosed in their April, 2022 Technical Report HCSU-103 that the Department of Land and Natural Resources (DLNR) has been funded to build out an insectary where they intend to mass produce lab-altered mosquitoes for release on the islands. This mosquito production at the DLNR insectary is planned to continue "into perpetuity" (forever). The FEA proposing agency's own board has final approval on a project that benefits the proposing agency:

"The state has been funded to develop a small-scale insectary that will be equipped with a containment biobubble to maintain tool efficacy and meet both federal and state permitting requirements regarding an Arthropod Safety Level 2 (ASL-2) facility."

This clear conflict of interest speaks to the real agenda of these agencies selling out the sacred lands of Hawai'i to corporate interests and biotech industry experimentation.

Details about the risks of these lab-infected mosquitoes are documented in our case in environmental court filed May 8, 2023 (attached) and in our Motion for Temporary Restraining Order and Preliminary Injunction filed June 20, 2023:

[Hawaii Unites and Tina Lia v. Board of Land and Natural Resources, State of Hawai'i, and Department of Land and Natural Resources, State of Hawai'i](#)

[Plaintiffs' Motion for Temporary Restraining Order and Preliminary Injunction](#)

We do not accept the Finding of No Significant Impact (FONSI) for the "Use of *Wolbachia*-based Incompatible Insect Technique for the Suppression of Nonnative Southern House Mosquito Populations on Kaua'i." We demand that the State of Hawaii and its multi-agency partnership *Birds, Not Mosquitoes* complete a detailed, full scope Environmental Impact Statement (EIS) documenting the impacts to the health of the people, native birds, wildlife, and the 'āina.

Aloha,
Tina Lia
Founder
Hawai'i Unites
HawaiiUnites.org

REFERENCES:

Hawaii Unites and Tina Lia v. Board of Land and Natural Resources, State of Hawai'i, and Department of Land and Natural Resources, State of Hawai'i (5/8/23)

https://hawaiiunites.org/wp-content/uploads/2023/05/2023_0508_Hawaii_Unites_and_Lia_v_BLNR_and_DLNR.pdf

Plaintiffs' Motion for Temporary Restraining Order and Preliminary Injunction (6/20/23)

https://hawaiiunites.org/wp-content/uploads/2023/06/2023_0620_Hawaii_Unites_and_Lia_v_BLNR_and_DLNR_Plaintiffs_Motion_for_TRO_Preliminary_Injunction_Filed_All_Documents.pdf

U.S. Department of the Interior Strategy for Preventing the Extinction of Hawaiian Forest Birds (12/15/22)

<https://www.fws.gov/sites/default/files/documents/DOI%20Strategy%20for%20Preventing%20the%20Extinction%20of%20Hawaiian%20Forest%20Birds%20%28508%29.pdf>

“Hawaiian Forest Bird Conservation Strategies for Minimizing the Risk of Extinction: Biological and Biocultural Considerations” – Eben H. Paxton, Megan Laut, Stanton Enomoto, Michelle Bogardus (USGS, UH Hilo, April 2022) (Appendix VI. Wolbachia IIT Implementation Outline, pages 80-85)

<https://dspace.lib.hawaii.edu/server/api/core/bitstreams/8b60e14e-0935-4b61-8339-4107f3ce91/content>

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IN THE CIRCUIT COURT OF THE FIRST CIRCUIT

STATE OF HAWAI'I

HAWAII UNITES, a 501(c)(3) nonprofit
corporation; Tina Lia, an individual,

Plaintiffs,

v.

BOARD OF LAND AND NATURAL
RESOURCES, STATE OF HAWAI'I, and
DEPARTMENT OF LAND AND
NATURAL RESOURCES, STATE OF
HAWAI'I,

Defendants.

Civil No.
(Environmental Court)

**COMPLAINT FOR DECLARATORY
AND INJUNCTIVE RELIEF;
EXHIBITS "A" - "C"**

COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF

Plaintiffs Hawaii Unites, a 501(c)(3) corporation (“Hawaii Unites”), and Tina Lia, an individual (“Lia”) (collectively, “Plaintiffs”), by and through their attorneys, Margaret Wille & Associates LLC, complain and allege against Defendant Board of Land and Natural Resources, State of Hawai‘i (“Board” or “BLNR”) and Defendant Department of Land and Natural Resources, State of Hawai‘i (“DLNR”) (collectively, “Defendants”) as follows:

INTRODUCTION

1. This action seeks review and relief against Defendants’ violations of the Hawai‘i Environmental Policy Act (“HEPA”), Hawai‘i Revised Statutes (“HRS”) chapter 343, in failing to require an environmental impact statement (“EIS”) for the “Suppression of Invasive Mosquito Populations to Reduce Transmission of Avian Malaria to Threatened and Endangered Forest Birds on East Maui,” a multi-agency partnership project to release biopesticide mosquitoes on 64,666 acres of East Maui. The proposed action in this case is the release of up to 775,992,000 biopesticide lab-reared *Wolbachia*-bacteria-infected mosquitoes per week in the fragile ecosystems of East Maui’s Haleakalā National Park, Ko‘olau Forest Reserve, Hāna Forest Reserve, Hanawī Natural Area Reserve, Kīpahulu Forest Reserve, Makawao Forest Reserve, and Waikamoi Preserve (The Nature Conservancy); as well as in the privately managed lands of East Maui Irrigation Company, LLC; Mahi Pono; and Haleakalā Ranch over a period of “likely at least 20 years.” At the highest frequency, this could result in over 807 billion mosquitoes released in one of the most unique and fragile ecosystems in the world. *See* attached **Exhibit A** (map of project area for release of incompatible mosquitoes).

2. The stated purpose of the mosquito biopesticide project (“experiment”) is to save endangered native birds from avian malaria using the Incompatible Insect Technique (“IIT”) for

mosquito population control. The Final Environmental Assessment (“FEA”) states that the experiment will have no significant impact on the environment. However, documentation and studies from several sources (including government agencies) confirm that the experiment may not even work for its intended purpose and has the potential for significant environmental impacts. Further, the IIT method has never been implemented in the state of Hawai‘i, and the specific experimental technique planned for use in East Maui has never been tried before anywhere in the world. Contrary to the assertions in the FEA, the plan could actually pose serious risks to native birds, wildlife, the ‘āina, and public health.

3. Rather than follow the prescribed process and faithfully comply with HEPA’s mandate that an EIS must be prepared for any proposed action that “may” have a significant impact on the environment, the BLNR disregarded public testimony about the risks of the project, failed to adequately address conflicts of interest brought to their attention by Plaintiffs, improperly denied Plaintiffs a contested case hearing, and rushed approval of the FEA and finding of no significant impact (“FONSI”) for the proposed project, notwithstanding that the final EA dismissed public comments and concerns and disregarded and distorted its disclosure and analysis of impacts in an attempt to justify a FONSI.

4. Defendants’ failure to require an EIS for this proposed experiment violates the letter and purpose of HEPA and its implementing regulations. Moreover, the BLNR’s approval of the final EA and FONSI immediately following the Board’s improper addition to the March 24, 2023 agenda of Plaintiff Lia’s verbal request for a contested case hearing on behalf of Plaintiff Hawaii Unites and the Board’s subsequent vote to deny Plaintiffs’ request without having received or reviewed Plaintiffs’ petition for a contested case hearing, violates the letter and purpose of HEPA, as well as fundamental requirements of administrative procedure and due

process. Defendants' violations in this case nullify HEPA's fundamental purpose: to "ensure that environmental concerns are given appropriate consideration in decision making" so that "environmental consciousness is enhanced, cooperation and coordination are encouraged, and public participation during the review process benefits all parties involved and society as a whole." HRS § 343-1. Appropriate consideration and public participation have both been lacking or denied in the instant case, where the proposal involves a massive experiment with no meaningful mitigation plan in place if things don't go according to plan. It is therefore essential to have a high level of trust and confidence that the planned action has been thoroughly assessed and evaluated.

JURISDICTION AND VENUE

5. This Court has jurisdiction over this matter pursuant to HRS §§ 343-7 "Limitation of actions", 603-21.5 "General", 603-21.9 "Powers", 604A-2 "Jurisdiction", HRS chapter 632 "Declaratory Judgments", and article XI, § 9 of the Hawai'i Constitution.

6. Venue properly lies in this judicial circuit pursuant to HRS § 603-36 "Actions and proceedings, where to be brought" (5) because the claims for relief arose in this circuit and because it is the location where the Defendants are domiciled.

PARTIES

Plaintiffs

7. Plaintiff Hawaii Unites is a 501(c)(3) nonprofit organization dedicated to the conservation and protection of Hawaii's environment and natural resources. The mission of Hawaii Unites is honoring and protecting our sacred connection to the natural world. The organization has conducted extensive research into the science, data, and documentation of the biopesticide mosquito project. Hawaii Unites has raised public awareness about the project

through investigative journalism, direct outreach, public speaking, and media. The organization has become a trusted source for information about the biopesticide mosquito project and is the foremost voice of advocacy for protecting the ‘āina from potential significant impacts and for requiring an environmental impact statement.

8. The recreational, educational, aesthetic, spiritual and subsistence interests of Hawaii Unites’ officers and supporters are harmed by Defendants’ failure to ensure full and proper disclosure of the proposed project’s harmful environmental and cultural impacts and available mitigation and alternatives, because the proposed project would be allowed to move forward without candid and transparent consideration and analysis of these issues.

9. Hawaii Unites’ officers and supporters live, work, and recreate in and around East Maui. Hawaii Unites’ officers and supporters are concerned about how the proposed biopesticide mosquito project will affect their local environment and public health. A healthy environment is necessary for Hawaii Unites’ officers and supporters to live, work, and fully participate in recreational activities without harm or fear of harm to their health or the health of their children. Hawaii Unites advocates for Hawaii’s environmental laws to be faithfully followed and for local community concerns to be meaningfully included in lasting decisions directly affecting Maui’s community.

10. Hawaii Unites advocates for the rights of Native Hawaiians to practice their customary and traditional cultural practices, as they have done for generations, and to use the East Maui project area for subsistence to feed and support their families. A healthy East Maui environment is essential for Native Hawaiians to engage in subsistence activities, and to pass on cultural traditions to future generations. Clean ecosystems are critical for Native Hawaiian cultural practices. The cultural interests of Native Hawaiians are harmed by Defendants’ failure

to ensure full and proper disclosure of the proposed project's harmful environmental and cultural impacts and available mitigation and alternatives, because the proposed project would be allowed to move forward without candid and transparent consideration and analysis of these issues.

11. The rights of Hawaii Unites' officers and supporters relevant to the natural areas of the project area are protected by the Hawai'i State Constitution and state law. Hawaii Unites' officers and supporters have rights to a clean and healthful environment under article XI, section 9 of the Constitution, which mandates enforcement of these rights through appropriate legal proceedings whenever any party, public or private, makes binding decisions under "laws relating to environmental quality, including control of pollution and conservation, protection and enhancement of natural resources."

12. In 2023, Hawaii Unites launched a petition through Change.org to "Demand an Environmental Impact Statement for the Experimental Mosquito Release on Maui" which, as of March 24, 2023, had received more than 2,500 signatures. Hawaii Unites' officers and all petition signatories residing in Hawai'i, including those in East Maui, are directly affected by the actions of Defendant DLNR in proposing and determining the project of landscape-scale biopesticide mosquito releases in the project area covering 64,666 acres of East Maui, and by the actions of Defendant BLNR in approving the EA and issuing a FONSI for the project.

13. Hawaii Unites submitted written and oral testimony to the BLNR for the agenda item of the proposed biopesticide mosquito release project at both the March 10, 2023, and the March 24, 2023, BLNR meetings. This testimony documented numerous risks to Maui's environment, native birds, wildlife, and public health. Peer-reviewed studies and expert opinions were referenced, along with the multi-agency partnership's own documents. Hawaii Unites'

testimony for the March 24, 2023, BLNR meeting documented additional procedural errors, specific conflicts of interest, potential lack of permitting, failure to receive United States Environmental Protection Agency (“EPA”) approval for use of the mosquitoes, and EPA discreditation of the EA’s cited article on human health risks.

14. Plaintiff Tina Lia is the founder of Hawaii Unites and current Board President. She resides on Maui, the island where the proposed biopesticide mosquito experiment area is located, and has submitted testimony since June, 2022, to the State of Hawai‘i Department of Agriculture Board of Agriculture and the BLNR, along with providing comments on the State of Hawai‘i Department of Agriculture’s EPA Request for Exemption of Federal and State Agencies for Use of a Pesticide Under Emergency Conditions Section 18 of FIFRA Specific Exemption (“EPA Application for Emergency Exemption”), and on the draft environmental assessment (“DEA”) for the project. These testimonies and comments documented serious risks of the project and the potential for significant environmental impact. Plaintiff Lia has also attended public meetings held by project agency partners since January 2023 and has voiced questions and concerns regarding the details and the risks of the project at those meetings.

15. Plaintiff Lia, on behalf of Hawaii Unites, verbally requested a contested case hearing for agenda item C-2 “Request Approval of Final Environmental Assessment and Authorization for the Chairperson to Issue a Finding of No Significant Impact for the ‘Suppression of Invasive Mosquito populations to Reduce Transmission of Avian Malaria to Threatened and Endangered Forest Birds on East Maui’” at the BLNR March 24, 2023, meeting. The BLNR then improperly added Hawaii Unites’ request for a contested case hearing to the agenda at the March 24, 2023, meeting. Without having received or reviewed Hawaii Unites’ petition for a contested case hearing which was to be submitted to the BLNR within ten days of

the verbal request, the BLNR then voted unanimously at the March 24, 2023, meeting to deny Hawaii Unites' request for a contested case hearing, thereby denying Hawaii Unites the right to due process. The BLNR stated that there was "no basis" and that the remedy was to "sue under Chapter 343." The BLNR subsequently voted unanimously to approve the final EA and issue a FONSI for the biopesticide mosquito project at the March 24, 2023, meeting. On March 27, 2023, Hawaii Unites filed a Sunshine Law Appeal with the State of Hawai'i Office of Information Practices (OIP) requesting an investigation by the OIP into the BLNR for their violation of HRS §92-7 at their meeting on March 24, 2023.

16. On March 13, 2023, Plaintiff Lia filed a complaint on behalf of Hawaii Unites with the State of Hawai'i Office of the Ombudsman, requesting an investigation into the BLNR for interference with the public's ability to testify at the BLNR meeting on March 10, 2023. Per Tina Lia's complaint, the BLNR Secretary emailed incorrect and inoperative information for providing video testimony at the meeting. The BLNR then rearranged the agenda items at the March 10, 2023, meeting in random order with no explanation to the public waiting to testify. Testifiers for the biopesticide mosquito project agenda item were made to sit through the entire eight-hour meeting, reduce their testimony from three minutes to two minutes each, and listen to the BLNR members joking and laughing about the postponement of the biopesticide mosquito project agenda item.

17. Hawaii Unites has repeatedly presented documented, compelling evidence of the risks and impacts of the biopesticide mosquito project to the BLNR. Rather than acknowledge and address the organization's concerns, the BLNR has acted in a consistently dismissive and disruptive manner towards this testimony. The rights of Hawaii Unites, of the organization's

supporters, and of the public, to open governmental processes have been infringed upon by the BLNR in their effort to silence discussion about the risks and impacts of the project.

18. BLNR's acceptance of DLNR's final EA and FONSI unlawfully allows DLNR and its multi-agency partnership *Birds, Not Mosquitoes* ("BNM") to avoid preparing an EIS fully analyzing and disclosing the proposed project's environmental and cultural impacts as well as available mitigation and alternatives, as HEPA requires. The failure to require an EIS impairs the individual and organizational interests of Hawaii Unites' officers and supporters in using, enjoying, and protecting the ecological and cultural resources in the East Maui project area.

19. Defendants' failure to fully and properly assess the environmental impacts of the proposed biopesticide mosquito project in an EIS as HEPA requires deprives Hawaii Unites, its officers, its supporters, the broader East Maui community and general public, and approving agencies of the information and analysis that would be generated and provided through a valid HEPA process, and threatens the further actions of the proposed project without the information disclosure, community input and engagement, and analysis of environmental and cultural impacts and mitigation measures and alternatives that HEPA mandates.

Defendants

20. Defendant DLNR is responsible for managing, administering, and exercising control over the State's public lands, the water resources, ocean waters, navigable streams, coastal areas (excluding commercial harbor areas), and minerals and all other interests therein. HRS §§ 171-3.

21. Defendant BLNR is the executive board that heads DLNR. *Id.* §§ 26-15(a), 171-3(a). BLNR is charged with exercising and performing "every power and duty conferred by law

and required to be performed” by DLNR. *Id.* § 26-38; *see also id.* § 171-6 (“[T]he board of land and natural resources shall have the powers and functions granted to the heads of departments.”).

22. BLNR’s powers and duties broadly include the authority to “adopt rules”; “appoint hearing officers to conduct public hearings”; bring enforcement actions; and establish “restrictions, requirements, or conditions . . . relating to the use of particular land being disposed of, the terms of sale, lease, license, or permit, and the qualifications of any person to draw, bid, or negotiate for public land.” *Id.* § 171-6. Under HRS chapter 171, “land” is defined to include “all interests therein and natural resources including water.” *Id.* § 171-1.

23. Since 1964, the BLNR has adopted and administered land use regulations for the Conservation District pursuant to the State Land Use Law (Act 187) of 1961. Act 187 defined Conservation as meaning the protection of watersheds and water supplies; preserving scenic areas; providing park lands, wilderness and beach reserves; conserving endemic plants, fish, and wildlife; preventing floods and soil erosion; forestry; and other related activities. The Conservation District has five subzones: Protective, Limited, Resource, General and Special. The first four subzones are arranged in a hierarchy of environmental sensitivity, ranging from the most environmentally sensitive (Protective) to least sensitive (General). The Special subzones defines a unique land use on a specific site. The use of Conservation District lands is regulated by Title 13 Chapter 5 of the Hawai‘i Administrative Rules (“HAR”) and Chapter 183C of the Hawai‘i Revised Statutes. These rules and regulations identify land uses that may be allowed by discretionary permit as well as impose fines for violations. *See* HAR § 13-5; HRS § 183C.

24. The Chairperson of the DLNR has the authority to declare exempt from the preparation of an environmental assessment those department actions that are included in the DLNR exemption list when the BLNR has delegated authority to conduct those actions. In June

2022, DLNR filed an exemption notice regarding the preparation of an environmental assessment under the authority of Chapter 343, Hawai‘i Revised Statutes (HRS) and Section 11-200.1-17, HAR, to conduct limited import of male mosquitoes for preliminary transport trials and mark release recapture studies. *See* HRS § 343; HAR § 11-200.1-17.

25. BLNR is the “agency that issues an approval prior to implementation of an applicant action” for the use of state lands for the project including a Conservation District Use Permit and management plan. According to the final EA, the HRS §343-5(a) “trigger(s)” for the project include:

- (1) Propose the use of state or county lands or the use of state or county funds
- (2) Propose any use within any land classified as a conservation district

BLNR is thus the acknowledged and undisputed lead “approving agency” for this proposed biopesticide mosquito project under HEPA. Haw. Admin. R (“HAR”) § 11-200.1-2. As the “approving agency,” BLNR is responsible for determining “whether the anticipated effects constitute a significant effect” and “the need for an EIS.”¹

26. Under article XI, sections 1 and 7 of the Hawai‘i Constitution, Defendants have public trust duties to conserve and protect the state’s natural resources for present and future generations. *See Kaua‘i Springs, Inc. v. Planning Comm’n*, 133 Hawai‘i 141, 172, 324 P.3d 951, 982 (2014).

27. Under article XII, section 7 of the Hawai‘i Constitution, Defendants are “obligated to protect customary and traditional rights to the extent feasible.” *Public Access*

¹ Office of Environmental Quality Control, State of Hawai‘i, *Guide to the Implementation and Practice of the Hawaii Environmental Policy Act* 14, 16 (2004), available at https://files.hawaii.gov/dbedt/erp/OEQC_Guidance/2012-GUIDE-to-the-Implementation-and-Practice-of-the-HEPA.pdf (– last visited on May 7, 2023); *see also* HRS § 343-5(e)

Shoreline Haw. v. Haw. Planning Comm'n, 79 Hawai'i 425, 437, 903 P.2d 1246, 1258 (1995); see also *Ka Pa 'akai o ka 'Āina v. Land Use Comm'n*, 94 Hawai'i 31, 35, 7 P.3d 1068, 1072 (2000).

LEGAL FRAMEWORK

28. HRS chapter 343, entitled “Environmental Impact Statements” and also known as the Hawai'i Environmental Policy Act or HEPA, is the cornerstone of Hawai'i's statutory environmental protections. The express purpose of HEPA is to “establish a system of environmental review which will ensure that environmental concerns are given appropriate consideration in decision making.” *Id.* § 343-1.

29. Process is the bedrock principle underlying HEPA. The legislature found that the environmental review process “will integrate the review of environmental concerns with existing planning processes of the State and counties and alert decision makers to significant environmental effects which may result from the implementation of certain actions.” *Id.* “[T]he process of reviewing environmental effects is desirable because environmental consciousness is enhanced, cooperation and coordination are encouraged, and public participation during the review process benefits all parties involved and society as a whole.” *Id.*

30. Timing is critical to the HEPA process. Environmental review shall occur “at the earliest practicable time,” before a proposed action may proceed to “assure an early, open forum for discussion of adverse effects and available alternatives, and that the decision-makers will be enlightened to any environmental consequences of the proposed action prior to decision-making.” HAR § 11-200.1-1(b). Environmental review documents “must be prepared early enough so that it can serve practically as an important contribution to the decision making process and will not be used to rationalize or justify decisions already made.” *Citizens for*

Protection of N. Kohala Coastline v. Cnty. of Hawai‘i, 91 Hawai‘i 94, 105, 979 P.2d 1120, 1131 (1999) (internal citation omitted).

31. HEPA applies to nine categories of actions, including those that propose the “use of state . . . lands,” or “any use within any land classified as a conservation district . . . under [HRS] chapter 205.” HRS § 343-5(a)(1), (2). Whenever any person (termed an “applicant”) proposes a covered action that requires agency approval, the approving agency “shall assess the significance of the potential impacts of the action to determine the level of environmental review necessary for the action.” HRS § 343-2; HAR § 11-200.1-14(b).

32. HEPA requires the preparation of an EIS for any action that “*may* have a significant effect on the environment.” HRS § 343-5(c) (emphasis added). The Hawai‘i Supreme Court has made clear that under the “may have a significant effect” standard, “plaintiffs need not show that significant effects will in fact occur but instead need only raise **substantial questions whether a project may have a significant effect.**” *Unite Here! Local 5 v. City & Cnty. of Honolulu*, 123 Hawai‘i 150, 178, 231 P.3d 423, 451 (2010) (internal citations omitted)(emphasis in original).

33. A “significant effect” is defined as “the sum of effects on the quality of the environment, including actions that irrevocably commit a natural resource, curtail the range of beneficial uses of the environment, are contrary to the State’s environmental policies or long-term environmental goals as established by law, or adversely affect the economic welfare, social welfare, or cultural practices of the community and State.” HRS § 343-2; *see also* HAR § 11-200.1-2.

34. In determining whether an action may have a significant impact on the environment, “the agency shall consider every phase of a proposed action, the expected impacts,

and the proposed mitigation measures.” HAR § 11-200.1-13(b). The agency must consider certain “significance criteria” outlined in HAR § 11-200.1-13. “[A]n action *shall be determined to have a significant effect on the environment if it may,*” among other factors:

- (1) Irrevocably commit a natural, cultural, or historic resource;
- (2) Curtail the range of beneficial uses of the environment;
- (3) Conflict with the State’s environmental policies or long-term environmental goals established by law;
- (4) Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State;
- (5) Have a substantial adverse effect on public health;
- (6) Involve adverse secondary impacts, such as population changes or effects on public facilities;
- (7) Involve a substantial degradation of environmental quality;
- (8) Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions;
- (9) Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat;
- (10) Have a substantial adverse effect on air or water quality or ambient noise levels;
- (11) Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

(12) Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies; or

...

HAR § 11-200.1-13(b).

The criteria are expressly listed in the disjunctive. Thus, the existence of a single factor is sufficient to require preparation of an EIS. *See id.*

35. An EIS is “an informational document . . . which discloses the environmental effects of a proposed action, effects of a proposed action on the economic welfare, social welfare, and cultural practices of the community and State, effects of the economic activities arising out of the proposed action, measures proposed to minimize adverse effects, and alternatives to the action and their environmental effects.” HRS § 343-2. Content requirements inform the substance of an EIS and are set forth in HAR §§ 11-200.1-24, -27.

36. An EIS generally must “fully declare the environmental implications of the proposed action and shall discuss all reasonably foreseeable consequences of the action,” as well as “responsible opposing views, if any, on significant environmental issues raised by the proposal.” *Id.* § 11-200.1-24(a). An EIS must discuss “significant . . . adverse impacts,” including cumulative impacts and secondary impacts, as well as proposed mitigation measures and alternatives considered. *Id.* §§ 11-200.1-24(d)(2), (3), (4). “Impacts” may include “ecological effects (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic effects, historic effects, cultural effects, economic effects, social effects, or health effects, whether primary, secondary, or cumulative.” *Id.* § 11-200.1-2.

37. An EIS must also contain a “discussion of the alternative of no action as well as reasonable alternatives that could attain the objectives of the action,” including “a rigorous exploration and objective evaluation of the environmental impacts of all such alternative actions,” with particular attention to “alternatives that might enhance environmental quality or avoid, reduce, or minimize some or all of the adverse environmental effects, costs, and risks of the action.” *Id.* § 11-200.1-24(h).

38. An EIS shall also include analysis of the probable impact of the proposed action on the environment, including “consideration of all consequences on the environment, **including direct and indirect effects**” and “[t]he interrelationships and cumulative environmental impacts of the proposed action and other related actions.” *Id.* § 11-200.1-24(l) (**emphasis added**). The EIS shall address “all probable adverse environmental effects that cannot be avoided,” including any adverse effects such as threats to public health or “other consequences adverse to environmental goals or guidelines” and shall clearly set forth “the rationale for proceeding with a proposed action, notwithstanding unavoidable effects.” *Id.* § 11-200.1-24(o).

39. Acceptance of a required final EIS is “a condition precedent to approval of the request and commencement of the proposed action.” HRS § 343-5(e).

40. If an applicant or approving agency anticipates that a proposed action will not have a significant effect on the environment, a draft EA may be prepared and submitted for public review and comment. *See* HAR §§ 11-200.1-2 (defining draft environmental assessment); -14(d), -19. Such an EA must be prepared “at the earliest practicable time to determine whether an environmental impact statement shall be required.” HRS §§ 343-2, -5(e).

41. Alternatively, if the agency determines that an EIS is likely to be required, “the agency may authorize the applicant to choose not to prepare an environmental assessment and instead prepare an environmental impact statement.” *Id.* § 343-5(e).

42. The content requirements of an EA are far less comprehensive than that of an EIS. *Compare* HAR §§ 11-200.1-18, -21, *with id.* §§ 11-200.1-24, -27. HEPA defines an EA as “a written evaluation to determine whether an action may have a significant effect.” HRS § 343-2. Content requirements that inform the substance of an EA are set forth in HAR §§ 11-200.1-18, -21.

43. An EA generally must contain a “general description of the action’s technical, economic, social, cultural, historical, and environmental characteristics,” as well as a “summary description of the affected environment,” “identification and analysis of impacts and alternatives considered,” and “proposed mitigation measures.” *Id.* §§ 11-200.1-18(d), -21.

44. With regard to the preparation of EAs and EISs, HEPA’s implementing rules prioritize “substance of the information conveyed” rather than the particular form or length of the document. HAR § 11-200.1-1(c)(1). “EAs, and EISs are meaningless without the conscientious application of the environmental review process as a whole, and shall not be merely a self-serving recitation of benefits and a rationalization of the proposed action.” *Id.* § 11-200.1-1(c).

45. Whenever an applicant proposes an action, “the authority for requiring an EA or EIS, making a determination regarding any required EA, and accepting any required EIS shall rest with the approving agency that initially received and agreed to process the request for an approval.” *Id.* § 11-200.1-7(c); *see also* HRS § 343-5.

46. After preparing, or causing to be prepared, a final EA, reviewing any public and agency comments, and applying the significance criteria in HAR § 11-200.1-13, the approving

agency shall issue either a notice of a FONSI or an EIS preparation notice (“EISPN”). HAR § 11-200.1-22(a).

47. If the approving agency determines that a proposed action is not likely to have a significant effect, it shall issue a notice of a FONSI. *Id.* § 11-200.1-22(b). A “finding of no significant impact” is defined as “a determination based on an environmental assessment that the subject action will not have a significant effect and, therefore, will not require the preparation of an environmental impact statement.” HRS § 343-2. If, however, the approving agency determines that a proposed action “*may* have a significant effect, it *shall* issue an EISPN.” HAR § 11-200.1-22(c) (**emphasis added**); HRS § 343-5(e)(3). An EISPN is “a determination that an action may have a significant effect on the environment and, therefore, will require the preparation of an EIS.” HAR § 11-200.1-2.

48. The agency shall file notice of the agency’s determination with the office of planning and sustainable development, which, in turn, publishes the agency’s determination for the public’s information. HRS § 343-5(e). The notice “shall indicate,” among other information, the “[r]easons supporting the determination.” HAR § 11-200.1-22(e).

49. HEPA provides for judicial challenge of a determination that an EIS is not required for a proposed action within 30 days after the public has been informed of the determination. HRS § 343-7(b).

RELEVANT BACKGROUND FACTS

Natural and Cultural Significance of East Maui

50. The National Park Service (“NPS”) and DLNR identified the project area through a collaborative process, during which all public lands within much of the current and historic ranges of threatened and endangered forest birds on East Maui were evaluated for inclusion. The

project area includes areas downslope from many birds' current ranges that may serve as high-density mosquito breeding grounds from which mosquitoes may move upward in elevation into native forest bird habitat.

51. The upper elevation limit of the project area was defined by the boundary of the park along the north slope and Palikū Ridge between Pōhaku Pālaha and Kuiki, separating native forest from Haleakalā Crater. The lower limit of the project area, 1,969 feet above sea level, is the low elevation range of vulnerable native forest birds, such as the 'apapane and 'i'iwi, except within the boundaries of the park in the lower Kīpahulu Valley and Ka'apahu where the project area extends to sea level. *Judge et al.* (2019).

52. The project area includes approximately 64,666 acres, including NPS land (12,042 acres), DLNR lands in forest reserves and natural area reserves (37,989 acres), adjacent lands privately managed in a conservation easement by The Nature Conservancy (8,606 acres), East Maui Irrigation Company, LLC (4,409 acres), Haleakala Ranch (393 acres), and Mahi Pono (1,227 acres) lands managed for conservation. *See attached Exhibit B* (table of project area acreage and management).

53. NPS Management Policies 2006 and Director's Order 47 require the agency to manage, preserve, and restore park acoustical environments and soundscapes. These policies require the NPS to protect and restore the natural soundscapes of parks, including those that have been affected by unnatural and unacceptable noise. In addition to these policies, the park's Foundation Document ("NPS 2015b") identifies natural sounds as one of the fundamental resources and values of the park. As discussed in the Foundation Document, natural soundscapes are vital components of a healthy, intact, biological community, that play an important role in wildlife communication and behavior and are critical to effective wilderness

management. In addition, natural soundscapes are highly desired by park visitors. As a fundamental resource and value, natural soundscapes are “warranted primary consideration during planning and management processes” (NPS 2015b). The natural acoustic environment of the park is a key fundamental resource and value, and is important for wildlife, visitors, and Native Hawaiian ceremonies. Because of this importance, the park has invested in over three decades of extensive acoustic monitoring, scientifically documenting the acoustic environment and where human-caused noise may impact key resources. Overall, the findings of these studies revealed that across the park, the acoustic environment is generally in good condition, while aircraft are documented as the most prevalent noise source affecting the soundscape. *NPS Management Policies* (2006); *NPS Director’s Order 47*; *NPS Foundation Document 2015b*; *Wood* (2015); *Lee et al.* (2016).

54. The Wilderness Act of 1964 established the National Wilderness Preservation System, which is currently comprised of over 800 congressionally designated wilderness areas and over 111 million acres. Congress passed the Act in order to preserve and protect certain lands “in their natural condition” and “to secure for the present and future generations the benefits of wilderness.” The Wilderness Act and NPS policy mandate preservation of wilderness character, which includes five tangible qualities: untrammeled, natural, undeveloped, outstanding opportunities for solitude or primitive and unconfined recreation, and other features of value. The Haleakalā Wilderness is designated by federal statute, and there is no wilderness on state or private lands. *The Wilderness Act of 1964*.

55. An untrammeled wilderness is one that is unhindered and free from the intentional actions of modern human control or manipulation. A natural wilderness is one where ecological systems are substantially free from the effects of modern civilization. An undeveloped

wilderness retains its primeval character and influence and is essentially without permanent improvements or modern human occupation. Wilderness provides outstanding opportunities for recreation in an environment that is relatively free from the hindrance of modern society. The ability to experience solitude is an integral component of wilderness, while opportunities for primitive and unconfined recreation make the wilderness experience unique.

56. The Wilderness Act states that wilderness “may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.” Haleakalā, a major geographical and cultural landmark of East Maui, remains intrinsically tied to contemporary Native Hawaiian culture by tangible and intangible cultural resources and values, place names, landscape features, and oral traditions and history. Additionally, the summit of Haleakalā, Kīpahulu Valley, and Kaupō Gap are eligible for the National Register of Historic Places as Traditional Cultural Properties for their association with the cultural landscape of Maui, primarily due to the known uses, oral history, mele (Hawaiian songs and chants), and legends associated with these areas. *The Wilderness Act of 1964.*

57. The fundamental purpose of Haleakalā National Park is to offer opportunities for public education and enjoyment. Residents and visitors come to the park to participate in a range of recreational activities, including viewing sunrise and sunset, hiking, swimming, bicycling, attending ranger programs, scenic flights or driving, stargazing and astronomy, birdwatching, and camping.

58. The DLNR Forest Reserve System was initially created to protect and restore watersheds in Hawai‘i. Today, the DLNR’s Division of Forestry and Wildlife (“DOFAW”) manages the forest reserves for conservation and public benefits in addition to the original watershed protections. Multiple management objectives include native ecosystem protection,

endangered species recovery, forest restoration, public recreation, forest products, opportunities for cultural practices, and archaeological preservation. The project area includes Ko‘olau Forest Reserve, Hāna Forest Reserve, Kīpahulu Forest Reserve, and Makawao Forest Reserve.

59. Hanawī Natural Area Reserve is located on the wet slopes on the north flank of Haleakalā. It contains a rare subalpine grassland as well as montane and lowland semi-wet and wet grasslands and forests. Rare plants and endangered birds are also protected by this reserve. The Natural Area Reserves System (“NARS”) was created to preserve and protect representative samples of Hawaiian biological ecosystems and geological formations. The Natural Area Reserves (“NARs”) are managed by the DLNR DOFAW Native Ecosystem and Protection Program. Areas that are designated as NARs are protected by rules and management activities designed to maintain and restore native ecosystems intact, so a sample of that natural community would be preserved. NARs are some of Hawai‘i’s most valued, pristine, and biologically diverse forests, coastal areas, and marine ecosystems. *DLNR (1997)*.

60. Public access to The Nature Conservancy’s Waikamoi Preserve is limited to guided hikes, educational and service trips, and scientific research. The Nature Conservancy (“TNC”) typically leads public hikes into Waikamoi Preserve one to two times per month throughout the year with a maximum of 15 participants. In addition, approximately one volunteer work trip is conducted once a month, and TNC typically provides trips into the preserve twice a month, once for local groups, and once a month for donors or other special guests.

61. Twenty-seven plant species listed as endangered under the federal Endangered Species Act (“ESA”) and HRS Chapter 195D occur within the project area. Fourteen of these species are found on park land within the project area, 11 on state land, and 11 are found on

TNC-managed lands. One of these 27 listed plant species, hāhā (*Cyanea kunthia*), is known to occur on lands managed by all three entities (i.e., park, state, and TNC) within the project area. The majority of the listed plant species occurring in the project area are found in lowland or montane, wet to mesic forests. The project area includes designated critical habitat for 37 federally listed plant species on park, state, and TNC-managed lands. Nineteen of the listed plant species with designated critical habitat that overlap the project area also have known occurrences within the project area. *Endangered Species Act*; HRS § 195D; U.S. Fish and Wildlife Service 2022b.

62. The ecosystems of East Maui and the project area include numerous intermittent and perennial streams, bogs, small montane lakes, and rainforest that provide habitat for native birds, bats, invertebrates, and aquatic organisms. The upper elevation habitats from approximately 3,900 feet to 6,400 feet are characterized as very wet, high-quality native-dominated rainforest. Nine species of federally listed threatened and endangered wildlife (one insect, eight bird species, and one mammal) are known to occur within the project area. Threatened and endangered wildlife species in the project area include the native damselfly, Hawaiian honeycreepers (kiwikiu, ‘ākohekohe, ‘i‘iwi), nēnē (Hawaiian goose), seabirds (albatross, petrel, shearwater, and storm-petrel), and ‘ōpe‘ape‘a (Hawaiian hoary bat). *Price et al.* (2007).

63. The East Maui project area is legendary in Hawaiian tradition and central to the community’s cultural identity. Healthy ecosystems are vital to the perpetuation of Native Hawaiian cultural and spiritual practices and values, such as ritual blessings and the preservation of culturally significant landmarks and sacred sites.

64. Hawaiians, like most indigenous and local communities, ascribe great cultural value to the natural resources in the environment around them. There are numerous plant resources used for cultural practices throughout the project area. There are also the native birds, which are highly valued and prized by practitioners. Their importance to mo‘olelo and mele (Hawaiian songs and chants) makes their preservation important to continuing cultural practices. Game in the project area is regularly gathered by hunters for subsistence purposes. Hunting is a cultural practice, including the hunting of non-native ungulates. This game is hunted by local practitioners and used to feed their families and communities.

65. There are several mo‘olelo (traditional accounts, stories, histories) that discuss the uplands and forested regions of the East Maui (Maui Hikina) project area.

DLNR’s Proposed Biopesticide Mosquito Project

66. DLNR, the proposing/determining agency for the biopesticide mosquito project, and its multi-agency partnership *Birds, Not Mosquitoes* plan to release up to 775,992,000 biopesticide lab-reared *Wolbachia*-bacteria-infected mosquitoes per week on Maui. The life of the plan, as stated in the final EA, is “likely at least 20 years.” This mosquito project is presented as an effort to save endangered native birds from avian malaria.

67. BNM is a collaboration of state, federal, and private non-profit partners evaluating the potential for control of mosquitoes on a landscape-scale in Hawai‘i. BNM includes representatives from DLNR, Hawai‘i Department of Health, U.S. Fish and Wildlife Service, University of Hawai‘i, U.S. Geological Survey, National Park Service, American Bird Conservancy, The Nature Conservancy of Hawai‘i, Coordinating Group on Alien Pest Species, and Island Conservation. The purpose of BNM is to coordinate and advance efforts to develop,

permit, test, and register for conservation for use as a biopesticide a strain of *Culex quinquefasciatus* (“southern house mosquito” or “*Culex q.*”) carrying *Wolbachia* bacteria.

68. The stated purpose of the biopesticide mosquito project is to substantially suppress or eliminate southern house mosquitoes and, thus, avian malaria in threatened and endangered forest bird populations on East Maui, thereby reducing extinction risks and contributing to the recovery of these species. The action consists of repeatedly releasing incompatible male mosquitoes using IIT with the intent of reducing the reproductive potential of wild mosquitoes. This method of IIT is known as population suppression.

69. The primary biopesticide mosquito release method would be by drones, with additional releases by helicopter and ground methods. Mosquitoes would be released throughout the 64,666-acre East Maui project area at up to 134 drone flights per week, causing viewscape impacts and noise disturbances to forest bird breeding and nesting. The project would have significant environmental consequences, including impacts to the untrammeled, natural qualities of the wilderness character and impacts to the outstanding opportunities for solitude or primitive and unconfined recreation. See attached **Exhibit C** (table of estimated number of drone flight hours and round-trip flight per treatment (releasing mosquitoes at each location) and per week (assuming 2 treatments per week) per land manager).

70. According to the FEA, treatments of up to 6,000 mosquitoes per acre would occur up to twice per week, amounting to potentially over 40 billion invasive biopesticide mosquitoes released per year on the island of Maui for likely at least 20 years. These mosquitoes would be released in biodegradable packages that would litter the canopy and forest floor for as long as they remain in the environment. Per the final EA, “many thousands of release packets would be dropped across the project area throughout the duration of the project.”

71. The State of Hawai'i Department of Agriculture (“HDOA”) regulates the importation of animals and microorganisms, and the use of pesticides in the state. The EPA oversees registration of new pesticides.

72. Microorganisms that control pests (microbial pesticides) are called biopesticides. Biopesticides are regulated by the EPA. *Wolbachia* bacteria is a microorganism. The mosquito species planned for *Wolbachia* bacteria microorganism infection, *Culex quinquefasciatus*, has never been used for stand-alone IIT field release. Before the EPA approves a biopesticide, an applicant must submit information about the mode of action along with scientific data on its efficacy and safety, including potential environmental impacts. These data are typically obtained through an Experimental Use Permit (“EUP”). The EPA has not issued an EUP for the biopesticide mosquitoes for this project. 7 U.S.C. §136 et seq. (1996).

73. After an EUP has been approved by the EPA, importing the biopesticide mosquitoes infected with the *Wolbachia* bacteria into the state requires a permit from the HDOA. The permit application requires the applicant to describe the reason for the introduction, persons responsible, locations where the microorganism will be kept, methods for disposal, and potential environmental impacts. HRS §150A-6.3.

74. An Emergency Exemption is a provision in the Federal Insecticide, Fungicide, and Rodenticide Act (“FIFRA”) under which the EPA can grant temporary exemption to a state or another federal agency to allow the use of a pesticide product not registered for that particular use. In October 2022, the HDOA submitted an EPA Request for Exemption of Federal and State Agencies for Use of a Pesticide Under Emergency Conditions Section 18 of FIFRA Specific Exemption (“EPA Application for Emergency Exemption”). The EPA Application for Emergency Exemption is to authorize the use of *Wolbachia pipientis*, strain wAlbB, contained in

live adult male *Culex q. mosquitoes*. The biopesticide is referred to as “DQB Males,” and it is noted that the “EPA Registration Number is pending.” The use of the biopesticide is to control *Culex q. mosquitoes*, the vector of avian malaria, for conservation uses in Hawai‘i by the HDOA.

75. The EPA Application for Emergency Exemption states: “The DQB line of mosquitoes was developed through transfection of *Wolbachia pipientis wAlbB* isolated from *Ae. albopictus* KLP strain mosquitoes originating from Kuala Lumpur, Malaysia into *Culex quinquefasciatus* Palmyra strain mosquitoes originating from Palmyra Atoll. Prior to transfection, the naturally occurring *wPip* infection was removed from the Palmyra strain through antibiotic treatment using tetracycline and rifampicin...”.

76. The HDOA’s EPA Application for Emergency Exemption was announced as approved by the EPA on April 27, 2023.

77. In October 2022, the HDOA Plant Quarantine Branch issued a permit to DLNR to allow for the import of southern house mosquitoes for mosquito control projects. The permit would need to be amended for broad-scale implementation of releases as part of this project.

78. The Advisory Committee on Plants and Animals’ recommendation to approve import and release of *Culex q. mosquitoes* should be null and void due to the conflicts of interest of committee members pursuant to HRS § 84-14. The *Hawai‘i State Ethics Commission Ethics Guide for State Board and Commission Members* states that members must not take official action affecting a business in which they have “financial interest.” “Financial interest” in a business includes “employment.” Whether a business can be a government agency is unstated. The following members of the Advisory Committee on Plants and Animals unanimously voted on June 9, 2022, to recommend approval of the import permit:

- (1) Darcy Oishi, Committee Chairperson, Hawai‘i Department of Agriculture (HDOA)
- (2) Dr. Maria Haws, Professor of Aquaculture, Pacific Aquaculture & Coastal Research Center, University of Hawai‘i at Hilo
- (3) Cynthia King, Entomologist, Division of Forestry & Wildlife, Department of Land & Natural Resources (DLNR), Ex Officio Member Designated Representative
- (4) Gracelda Simmons, Environmental Management Program Manager, Hawai‘i Department of Health, Ex Officio Member Designated Representative
- (5) Thomas Eisen, Planner, Environmental Review Program, Department of Business, Economic Development and Tourism, Ex Officio Member Designated Representative
- (6) Joshua Fisher, Wildlife Biologist, U. S. Fish and Wildlife Service (USFWS)
- (7) Dr. Samuel Ohu Gon III, Senior Scientist and Cultural Advisor, The Nature Conservancy - Hawai‘i (TNC)

Of the seven voting members’ agencies, only those of Thomas Eisen and Darcy Oishi are not partner agencies in *Birds, Not Mosquitoes*. As employees of partner agencies, Dr. Maria Haws (University of Hawai‘i), Cynthia King (DLNR), Gracelda Simmons (Hawai‘i Department of Health), Joshua Fisher (USFWS), and Dr. Samuel Ohu Gon III (TNC) all have potential conflicts of interest. Both Dr. Samuel Ohu Gon III and Cynthia King are also members of the *Birds, Not Mosquitoes* steering committee. The purpose of the steering committee, as stated in the National Fish and Wildlife Foundation Hawai‘i Conservation Business Plan, includes coordinating permits for this project. See HRS § 84-14; *Hawai‘i State Ethics Commission Ethics Guide for*

State Board and Commission Members (2023); National Fish and Wildlife Foundation Hawai'i Conservation Business Plan (2021).

79. An Environmental Risk Assessment for this biopesticide has not been conducted by the EPA to determine the environmental, ecological, and human health risks.

80. This project may have been improperly segmented. HAR § 11-200.1-10 – “Multiple or phased actions”, provides:

A group of actions shall be treated as a single action when:

- (1) The component actions are phases or increments of a larger total program;
- (2) An individual action is a necessary precedent to a larger action;
- (3) An individual action represents a commitment to a larger action; or
- (4) The actions in question are essentially identical and a single EA or EIS will

adequately address the impacts of each individual action and those of the group of actions as a whole.

On June 17, 2022, BLNR Chairperson Suzanne D. Case signed an exemption notice for “Mosquito Control Research Using *Wolbachia*-based Incompatible Insect Technique.” The final EA states that the DLNR filed the exemption notice “to conduct limited import of male mosquitoes for preliminary transport trials and mark release recapture studies.” Per HEPA, “a proposed action must be described in its entirety and cannot be broken up into component parts, which if each is taken separately, may have minimal impact on the environment. Segmenting a project generally is forbidden.” Because the project has been improperly segmented in this way, there have been no details or analysis of the preliminary trials or the mark release recapture studies. There has been no disclosure as to what type of mosquito is being transported, where the mosquitoes are being transported from, and whether or not the mosquitoes are being tested

for pathogens prior to transport. All actions of the mosquito project - including trial imports, mark release recapture studies, and field releases – should be addressed in one EIS. HAR § 11-200.1-10; *Hawai‘i Environmental Policy Act Citizen’s Guide* (2014).

81. Federal documentation connected to this project states that “TNC committed to collecting and providing some of the initial costs to deploy *Wolbachia* IIT for the first site in Hawai‘i through a contract with Verily Life Sciences, a subsidiary of Google.” The DLNR’s June 9, 2022, field release import request for this proposed biopesticide mosquito project lists the shippers of the commodity “Various Shipments of the Southern House Mosquito, *Culex quinquefasciatus* (Diptera: Culicidae), inoculated with Strains of *Wolbachia* Bacteria” as Stephen Dobson, MosquitoMate, Inc., Lexington KY; and Verily Life Sciences, South San Francisco CA. Verily Life Sciences (“Verily Life Sciences, LLC” or “Verily”) is a subsidiary of Google’s parent company, Alphabet Inc. *U.S. Department of the Interior Strategy for Preventing the Extinction of Hawaiian Forest Birds* (2022).

82. Federal documentation connected to this project confirms that “although used world-wide for human health, *Wolbachia* IIT is a novel tool for conservation purposes and its degree of efficacy in remote forest landscapes is unknown.” *U.S. Department of the Interior Strategy for Preventing the Extinction of Hawaiian Forest Birds* (2022).

Documented Risks and Potential Significant Impacts of the Biopesticide Mosquito Project

83. This plan is an experiment on our island home. There are serious risks, and the outcome is admittedly unknown.

84. The species planned for use in this project, *Culex quinquefasciatus*, has never been used for a stand-alone Incompatible Insect Technique (IIT) biopesticide mosquito field release. The *Culex q.* mosquito has never been lab-bred and *Wolbachia*-bacteria-infected and

then released for mosquito suppression or population replacement. Although *Culex q.* was lab-bred and infected with *Wolbachia* in a 2020 study by Ant et al., the mosquitoes were not released for the purpose of mosquito suppression or population replacement. Ant et al. were studying the ability to make the mosquitoes incompatible, but they did not release any *Culex q.* mosquitoes.

Wolbachia transinfections in Culex quinquefasciatus generate cytoplasmic incompatibility (2020).

85. Landscape level control of *Culex quinquefasciatus* mosquitoes using the Incompatible Insect Technique (IIT) has never been done before. Even with *Aedes* mosquitoes, the largest project area was 724 acres. The East Maui project area is 64,666 acres. This means that the East Maui project area would be the largest area ever to be used for any IIT - over 89 times larger than the current 724-acre maximum. The largest release area to date globally for a mosquito suppression project was the Fresno DeBug project which released in an area of 724 acres, and the release was of *Aedes aegypti* mosquitoes. The only known time that the southern house mosquito was released for mosquito suppression was a 1982 study in India by Curtis et al. that used *Wolbachia* with a translocation that induced sterility. Because of the translocation, this was not a "stand-alone" project. The closest study to using *Culex q.* with *Wolbachia* to suppress mosquitoes was the 1967 Laven study in Okpo ("Okpho"), Burma ("Myanmar"), which was done with *Culex pipiens fatigans*, a species closely related to *Culex quinquefasciatus*. Crawford et al. (2020); Curtis et al. (1982); *Eradication of Culex pipiens fatigans through Cytoplasmic Incompatibility* (Laven, 1967).

86. Tropical disease and vector expert Dr. Lorrin Pang, speaking as a private citizen, has expressed concerns about horizontal transmission ("horizontal spread" or "horizontal transfer") of the introduced *Wolbachia* bacteria strain to wild mosquitoes and other insects,

including other insect vectors of disease. Horizontal transmission is defined as the spread of an infectious agent from one group or individual to another, directly or indirectly. Dr. Lorrin Pang (“Pang” or “Dr. 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. In regard to this project, Dr. Pang has stated “Hawai‘i has a bad history of invasive species entering and spreading unabated, including their spread of infectious diseases.”

Wolbachia Mosquitoes in Hawaii: Unsettled Science Part 2 (2022).

87. Peer-reviewed studies document horizontal transmission of *Wolbachia* bacteria. 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. *Wolbachia infection in wild mosquitoes (Diptera: Culicidae): implications for transmission modes and host-endosymbiont associations in Singapore* (2020); *Wolbachia Horizontal Transmission Events in Ants: What Do We Know and What Can We Learn?* (2019); *The Intracellular Bacterium Wolbachia Uses Parasitoid Wasps as Phoretic Vectors for Efficient Horizontal Transmission* (2015).

88. Horizontal transmission of the *Wolbachia* bacteria can occur through mating, shared feeding sites, and serial predation of larva in standing water breeding sites.

89. Peer-reviewed studies have shown *Wolbachia* bacteria in mosquitoes to cause increased pathogen infection and to cause mosquitoes to become more capable of spreading diseases such as avian malaria and West Nile virus. West Nile virus can infect birds and humans. This project has the potential to cause the extinction of endangered native birds, and it could impact human health. *Wolbachia Can Enhance Plasmodium Infection in Mosquitoes: Implications for Malaria Control?* (2014); *Wolbachia Enhances West Nile Virus (WNV) Infection in the Mosquito Culex tarsalis* (2014).

90. *Wolbachia* bacteria 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 it is unknown how this might affect our native bird habitats. *Parasites brainwash grasshoppers into death dive* (2005).

91. The final EA fails to adequately address the accidental release of lab-bred *Wolbachia*-infected females who bite, breed, and spread disease.

92. The final EA's assertion that released mosquitoes pose no risk to human health is based on unsound science. The 2010 article by Popovici et al. cited in the final EA has been discredited by the EPA. *Assessing key safety concerns of a Wolbachia-based strategy to control dengue transmission by Aedes mosquitoes* (2010); *April 24-26, 2018, Meeting of the Human Studies Review Board*; *April 24-26, 2018, EPA Human Studies Review Board Meeting Report*.

93. The final EA fails to adequately address the potential for the release of biopesticide mosquitoes to cause unexpected evolutionary events and population replacement. *Wolbachia infection in wild mosquitoes (Diptera: Culicidae): implications for transmission*

modes and host-endosymbiont associations in Singapore (2020); *Wolbachia-mediated sterility suppresses Aedes aegypti populations in the urban tropics* (2021).

94. The final EA fails to address biopesticide drift – the movement of biopesticide mosquitoes through wind to unintended areas.

95. The final EA fails to adequately address the potential for horizontal gene transfer between the *Wolbachia* endosymbiont and the host. Horizontal gene transfer in this context would be the movement of genetic material (“DNA”) from *Wolbachia* into the southern house mosquito, or other host, genome. Horizontal gene transfer is the movement of genetic information between organisms, a process that includes the spread of antibiotic resistance genes among bacteria (except for those from parent to offspring), fueling pathogen evolution.

Horizontal gene transfer between Wolbachia and the mosquito Aedes aegypti (2009); *Horizontal Gene Transfer* (2015).

96. There are no documented biosecurity protocols in the final EA for the biopesticide mosquitoes used in this project.

97. There are no documented pathogen screenings in the final EA for the biopesticide mosquitoes. No assurances have been made that the biopesticide mosquito labs contracted for this project will be testing the lab-bred mosquitoes for human diseases, avian diseases, or other animal diseases to ensure that they are pathogen-free prior to shipping to Hawai‘i for field release. Lab-bred mosquitoes are blood-fed from sources that are not identified in the final EA. These mosquitoes could be transporting pathogens into Hawai‘i.

98. Male mosquitoes transmit bacteria and pathogens to females. Infected females can spread disease to birds (including endangered native birds), other animals, and humans.

99. Male *Culex q.* mosquitoes are known to spread viruses to female mosquitoes through mating (e.g., St. Louis encephalitis virus), as has been shown for dengue virus in *Aedes albopictus* mosquitoes. *Venereal Transmission of St. Louis Encephalitis Virus by Culex quinquefasciatus Males (Diptera: Culicidae)* (1990); *Sexual transmission of dengue viruses by Aedes albopictus* (1987).

100. As this project involves the interstate transport of *Culex q.* mosquitoes, a known vector of poultry diseases, there are potential impacts to local poultry farms and egg production in Hawai'i. There is no mention in the final EA of United States Department of Agriculture ("USDA") inspection of the biopesticide mosquito lab insectary/insectaries. There is no mention in the final EA of a USDA permit (e.g., OV VS 16-6 permit from APHIS) for the interstate transport of poultry pathogen vectors. The USDA Animal and Plant Health Inspection Service ("APHIS") states: "The Veterinary Services, Organisms and Vectors (OV) Permitting Unit regulates the importation into the United States, and interstate transportation, of organisms and vectors of pathogenic diseases of livestock and poultry. The Code of Federal Regulations, in 9 CFR, §122.2, mandates that 'no organisms or vectors shall be imported into the United States or transported from one State or Territory or the District of Columbia to another State or Territory or the District of Columbia without a permit.'" Given that interstate transport of the vector (live *Culex q.*) is planned to occur, and those *Culex q.* may contain a highly contagious poultry pathogen, namely avian pox virus, this transport would require a federal permit. *USDA Animal and Plant Health Inspection Service (APHIS): Organisms and Vectors Guidance & Permitting* (2022); 9 CFR, § 122.2; *Detection and molecular characterization of Avipoxvirus in Culex spp. (Culicidae) captured in domestic areas in Rio de Janeiro, Brazil* (2022).

101. The final EA lists numerous potential impacts that require mitigation measures. These impacts are not adequately addressed. Concerns include, but are not limited to: wildland fire ignition by helicopters; helicopter rotor wash; spread of invasive weeds; transport and establishment of introduced invasive weeds and diseases/pathogens; disturbances to native and special status plants and acceleration of erosion; noise-producing activities adversely affecting native wildlife; noise disturbances and other impacts to special status wildlife species, including disturbances to nesting and roosting; adverse impacts within critical special status species habitats; disturbances of traditional cultural practices; threats to human health and safety; noise impacts on landowners, communities, wilderness, and sensitive environmental resources; noise and viewscape impacts on the visitor experience; and impacts to the wilderness character.

102. The final EA does not adequately address the potential impacts of up to 134 drone flights per week over the project area for the life of the plan - likely at least 20 years as stated in the final EA. These impacts include risks to threatened and endangered wildlife species in the project area, namely the native damselfly, Hawaiian honeycreepers (kiwikiu, ‘ākohekohe, ‘i‘iwi), nēnē (Hawaiian goose), seabirds (albatross, petrel, shearwater, and storm-petrel), and ‘ōpe‘ape‘a (Hawaiian hoary bat). Drone hovering; risks of breeding birds being flushed from active nests; disturbances of day roosting Hawaiian hoary bats; and risks of disturbing bat pup rearing are all noted impacts. The final EA notes that the sound produced by each drone “is similar to loud highway noise,” that “drone noise could possibly be loud enough to disrupt conversations,” and that aircraft wildlife collisions could happen. The document states that “it is possible that a drone could inadvertently fly into a flock of birds.”

103. The final EA states that “mosquitoes would likely be released in small biodegradable packages designed to open upon contact with the canopy or forest floor,” and that

“these mosquito packages (dropped via aerial means) would result in an impact to the undeveloped quality of wilderness for as long as they remain in the environment (until they biodegrade).” The environmental effects of dropping mosquito packaging in the project area are not adequately addressed in the final EA. The final EA states that the final design of the mosquito packaging “has not been decided upon” and that “until a final product is designed, specific decay rates or other relevant variables are not known.” The final EA further states that “many thousands of release packets would be dropped across the project area throughout the duration of the project.”

104. Dr. Pang has noted that there is a significant difference between the standard Sterile Insect Technique (“SIT” or “standard 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 is very different modeling for the target insect - but more importantly, for the unintended groups to which the bacteria horizontally spread. 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.’” *Wolbachia Mosquitoes in Hawaii: Unsettled Science Part 2* (2022).

105. The potential negative impacts of introducing an invasive species to the islands have not been adequately addressed in the final EA.

106. The final EA fails to include the completion of a feasibility study to provide a detailed analysis that considers all of the critical aspects of the proposed project in order to determine the likelihood of it succeeding, and fails to establish, under the precautionary principle, that the proposed activity will not result in significant harm.

107. Once this biopesticide mosquito release plan starts, it is irreversible.

108. The scope, risks, and experimental nature of the project require detailed, comprehensive studies and documentation of the impacts to our native birds, wildlife, environment, and public health. The subject action will have a significant effect, and therefore, requires the preparation of an EIS.

HEPA Review Process

109. It is undisputed that HEPA applies to DLNR's proposed biopesticide mosquito project, which uses state lands and lands within the conservation district.

110. In November 2022, the DLNR transmitted a draft EA and anticipated finding of no significant impact ("DEA-AFONSI" or "DEA-AFNSI" or "AFNSI") for the biopesticide mosquito project, "Suppression of Non-native Wild Mosquito Populations to Reduce Transmission of Avian Malaria to Threatened and Endangered Forest Birds on East Maui," to the State of Hawai'i Office of Planning and Sustainable Development Environmental Review Program ("ERP") for publication in *The Environmental Notice*.

111. On December 8, 2022, the DEA-AFONSI ("AFNSI") was published by the ERP in *The Environmental Notice*. The statutory 30-day public review and comment period for the DEA-AFONSI started on the publication date, December 8, 2022. Pursuant to HRS Chapter

343, comments were due by January 9, 2023. The National Park Service, in collaboration with the DLNR, accepted comments through their website link and by mail through January 23, 2023, extending the public review and comment period.

112. Following the December 8, 2022, publication of the DEA-AFONSI, and prior to the January 23, 2023, deadline for comments, Hawaii Unites Founder and President Tina Lia submitted a comment on behalf of the organization. This comment was submitted online, as well as by United States Postal Service priority mail. Both the online comment and the mailed hard copy were received and accepted by the National Park Service. Hawaii Unites' comment on the DEA-AFONSI documented risks of the project, including but not limited to, the experimental nature of the plan, lack of EPA registration of the biopesticide mosquitoes; dangers of horizontal transmission of the introduced bacteria strain, increased pathogen infection in mosquitoes, irreversible evolutionary events, population replacement, accidental release of lab-reared ("lab-strain-infected") females, creation of lab-strain-infected females in the wild, horizontal gene transfer, biopesticide drift, and mosquitoes becoming more capable vectors of avian malaria and West Nile virus. Peer-reviewed studies were included for reference. Specific concerns voiced by tropical disease and vector expert Dr. Lorrin Pang, speaking as a private citizen, were described in detail, with a focus on the risks of horizontal transmission of the lab bacteria.

113. While the accidental release of misidentified lab-reared female mosquitoes was not addressed at all in the draft EA, Hawaii Unites' DEA-AFONSI comment provided documentation from the DLNR's "Permit Application for Restricted Commodities into Hawaii" for import of the mosquitoes, as well as figures published online by the EPA, stating the expected accidental release rate of one *Wolbachia*-bacteria-infected female for every 250,000 males. Hawaii Unites noted that with the potential release of up to 775,992,000 biopesticide

mosquitoes per week on Maui, this would calculate to up to 3,103 lab-strain-infected females released on the island per week, and each of those 3,103 females could produce a conservative estimate of 160,000 more females in her eight-week lifespan, amounting to potentially 496,480,000 lab-strain-infected females within each eight-week lifespan of the initial accidental release scourge. Female mosquitoes bite and spread disease. Lab-strain-infected females can breed with the lab-strain-infected males released, and population replacement can occur. Wild females can also become lab-strain-infected through horizontal transmission, further exacerbating population replacement risks. Hawaii Unites' DEA-AFONSI comment highlighted these concerns, along with the potential for the *Wolbachia* bacteria to cause increased pathogen infection in the mosquitoes, concluding, "What if the entire mosquito population becomes more capable of transmitting disease to birds, humans, and other wildlife?"

114. Hawaii Unites' DEA-AFONSI comment addressed concerns regarding potential impacts requiring mitigation measures per the draft EA, including but not limited to, noise disturbances and other impacts to special status wildlife species, spread of invasive weeds, disturbances to native and special status plants and acceleration of erosion, impacts to wilderness character; and threats to endangered species, including disturbances to nesting and roosting of Hawaiian forest birds and Hawaiian hoary bats, and the possibility that a drone could inadvertently fly into a flock of birds. Hawaii Unites' comment also noted that the effects of the release of mosquito packaging on the environment and wildlife are not addressed in the draft EA.

115. Concerns of Native Hawaiian lineal descendants and cultural experts, along with the issue of Environmental Justice, were addressed in Hawaii Unites' DEA-AFONSI comment. Hawaii Unites stated: "In the EA's 'Cultural Impact Assessment' section, seven Native Hawaiian lineal descendants and recognized cultural experts were interviewed. All expressed

concerns about the impacts of the project, focused on the effects it could have on cultural resources and traditions, native birds, public health, wildlife, and our fragile ecosystems. Additional concerns include the experimental aspect of the project; the state’s history of creating new problems by bringing in invasive species such as the mongoose; the sensitivity of the project area, with people depending on native flora and fauna for their livelihoods; impacts on other animals like ‘ōpae (shrimp) and ‘o‘opu (goby fish) that live in streams; whether or not adequate studies or research have been done; residual effects on other insects; impacts on native plants used for lei making, weaving, and other cultural practices; impacts on water sources; impacts on other islands from water sources connected through tides and currents; and the need to keep the public informed. The state’s assessment concludes, ‘If the project and concerns about the use of this biocontrol discourage practitioners from conducting their traditional or customary practices, it would be an adverse effect to these cultural activities.’ As a result of their location, cultural practices, and other factors, Native Hawaiians may have atypical or disproportionately high and adverse human health impacts and environmental effects from exposure to the biopesticide.”

116. Hawaii Unites’ DEA-AFONSI comment stated, “Adequate studies and research have not been conducted; and safer, less experimental alternatives have not been considered.”

117. On March 17, 2023, the DLNR posted the final EA for the biopesticide mosquito project on their website. The final EA included a recommendation that the Board approve the final EA, authorize the Chairperson to issue a FONSI, and authorize the Chairperson to publish a FONSI for the final EA in the ERP’s *The Environmental Notice*. The final EA also included an Appendix H: “Responses to Substantive Public Comments on Environmental Assessment.” Appendix H addressed public comment concerns, including but not limited to, insufficient analysis and the lack of preparation of an EIS, potential impacts to public health and increased

risk of disease transmission, adverse impacts of introduced biological control mechanisms, insufficient study of the proposed action, introduction of foreign *Wolbachia* bacteria to an environment on Maui where it currently does not occur, the proposed project being an experiment that has not been implemented prior, the release of female mosquitoes, the risk of *Wolbachia*-infected mosquitoes increasing disease transmission to humans (e.g., malaria, dengue fever, yellow fever, Zika virus, West Nile virus), horizontal transfer of *Wolbachia* to other mosquitoes or insect species non-maternally, horizontal gene transfer, Native Hawaiian concerns and Environmental Justice, impacts to bats and dragonflies, the environmental effects of dropping mosquito packaging in the project area, and unanticipated outcomes and the need to implement a monitoring and response plan.

118. The potential significant impacts of the project to the environment, wildlife, and public health have not been adequately studied, and Appendix H of the final EA does not adequately address public comment and concerns. These comments and concerns include, but are not limited to:

- The creation of lab-strain-infected females in the wild through horizontal transmission
- Biopesticide drift, or the movement of the lab-bred mosquitoes through wind to unintended areas
- The specific concerns of tropical disease expert Dr. Lorrin Pang focused on horizontal transmission. Horizontal transmission is addressed and downplayed in Appendix H, there are no references to Dr. Pang's expert opinion, and specific significant peer-reviewed studies referenced by Dr. Pang are not addressed.
- The peer-reviewed study referenced by Dr. Pang regarding the ability of *Wolbachia* bacteria to live outside of intra-cellular systems for several months
- *Wolbachia* bacteria as parasitic, altering host behavior
- Failure to provide any information pertaining to responsible parties or decision makers if something goes wrong with the experiment
- Lack of biosecurity protocols

119. The final EA does not adequately address potential impacts to public health and increased risk of disease transmission documented in peer-reviewed studies, including the risk of

increased transmission of West Nile virus. The final EA's assertion that released mosquitoes pose no risk to human health is based on unsound science. The 2010 article by Popovici et al. cited in the final EA has been discredited by the EPA. The EPA Human Studies Review Board met in 2018 and concluded: "The Board concluded that the research described in the article by Popovici et al. was not scientifically sound and does not provide reliable data to contribute to a weight of evidence determination for assessment of human health risks due to release of *Wolbachia*-infected mosquitoes."

120. The final EA does not adequately address the peer-reviewed study documenting the potential for the *Wolbachia* bacteria to cause increased capability of mosquitoes to transmit avian malaria.

121. The *Wolbachia* is an introduced foreign bacterium. The final EA inaccurately states that, "The proposed action will not involve introducing any new or foreign organisms to Hawai'i." The EPA Application for Emergency Exemption states, "The DQB line of mosquitoes was developed through transfection of *Wolbachia pipientis wAlbB* isolated from *Ae. albopictus* KLP strain mosquitoes originating from Kuala Lumpur, Malaysia into *Culex quinquefasciatus* Palmyra strain mosquitoes originating from Palmyra Atoll." The DLNR's June 9, 2022, field release import request for this proposed biopesticide mosquito project lists a strain of bacteria that doesn't exist on the Hawaiian Islands, *Wolbachia wPip4*.

122. The proposed project is an experiment that has never been implemented before. The final EA inaccurately contradicts this fact. Landscape level control of *Culex quinquefasciatus* mosquitoes using the Incompatible Insect Technique (IIT) has never been done before. The largest documented project area to date globally is 724 acres, and the project used *Aedes* mosquitoes. The East Maui project area for this biopesticide mosquito project is 64,666

acres, which is over 89 times the size of the largest field release area ever documented globally. IIT has never been used for conservation purposes before. The *U.S. Department of the Interior Strategy for Preventing the Extinction of Hawaiian Forest Birds* confirms that “although used world-wide for human health, *Wolbachia* IIT is a novel tool for conservation purposes and its degree of efficacy in remote forest landscapes is unknown.” The species of mosquito planned for use in this project, *Culex quinquefasciatus*, has never been used for a stand-alone IIT field release. *Wolbachia* IIT is not widely used for mosquito suppression globally. The majority of countries using *Wolbachia* mosquitoes through the World Mosquito Program are using the method of population replacement, not suppression. These are two entirely different techniques. The replacement method more widely used requires release of male and female mosquitoes. Only a small number of mosquitoes need to be released, and usually only one release is required (once per week for 12-30 weeks). With the suppression approach planned for use in East Maui, a very large number of male mosquitoes need to be released continually and indefinitely, otherwise the population will rebound.

123. Peer-reviewed studies documenting the risks of horizontal transmission (“horizontal transfer”) of the *Wolbachia* bacteria to other mosquitoes and insect species are not adequately addressed in the final EA.

124. The peer-reviewed study documenting the risk of horizontal gene transfer is not adequately addressed in the final EA.

125. The history of adverse impacts of introduced biological control mechanisms in Hawai‘i is not adequately addressed in the final EA.

126. The impacts to endangered native Hawaiian hoary bats, native dragonflies, and endangered native damselflies are not adequately addressed in the final EA.

127. The release of female mosquitoes is not adequately addressed in the final EA. The EPA website and the DLNR's "Permit Application for Restricted Commodities into Hawaii" for import of the mosquitoes both state the expected accidental release rate of one *Wolbachia*-bacteria-infected female for every 250,000 males. The final EA contradicts this figure, describing the use of artificial intelligence ("AI") as "methods likely to be employed." The final EA does not state the specific method planned for use in the biopesticide mosquito project. The final EA does not address the June 17, 2021, preprint study in Singapore stating that, "even with high-fidelity sorting, inadvertent release of a few fertile females can lead to stable establishment of *Wolbachia* in the field, given the lack of competition from the nearly eliminated wildtype population." The study states: "Our data further show that when the wildtype mosquito population is suppressed to very low levels - possibly close to elimination, as in the Tampines core - release of even a few fertile *wAlbB*-SG females could result in establishment of *wAlbB* in the field population. This threshold may be as low as three individuals, the minimum number of *wAlbB*-SG females we believe were released in the Tampines core during Phase 2." *Wolbachia*-mediated sterility suppresses *Aedes aegypti* populations in the urban tropics (2021).

128. The environmental effects of dropping mosquito packaging in the project area are not adequately addressed in the final EA. The final EA states that the final design of the mosquito packaging "has not been decided upon" and that "until a final product is designed, specific decay rates or other relevant variables are not known." The final EA further states that "many thousands of release packets would be dropped across the project area throughout the duration of the project."

129. The final EA does not adequately address concerns around unanticipated outcomes and the need to implement a monitoring and response plan. The full extent of the text

added to the final EA to address these concerns reads: “DLNR will work with State and Federal partners to prepare a detailed monitoring plan.” No further information is provided.

130. Native Hawaiian concerns, including concerns regarding environmental justice, are not adequately addressed in the final EA. Native Hawaiians will be disproportionately affected by the project because they live near the project area, frequent the project area for cultural practices, and rely on the resources of the project area. Also, per the EA “According to EJScreen, EPA’s Environmental Justice Screening and Mapping Tool, census block groups within and around the project area on East Maui are comprised of populations where at least 50 percent of the population is considered a minority. Therefore, environmental justice communities exist in the study area.” Risks and impacts to ethnographic resources and cultural practices have not been adequately studied or addressed. Native Hawaiians rely on the resources of the project area for their livelihoods and cultural practices. Cultural practices may be disrupted by noise disturbances and viewscape impacts. Native plants, native birds, native dragonflies, native endangered damselflies, and native endangered Hawaiian hoary bats could be impacted by the project. Native Hawaiian food sources could be impacted by the project. Human health impacts of this project have not been adequately studied, and the EA’s assertion of released mosquitoes posing no risk to human health is based on unsound science. Native Hawaiians, including cultural practitioners, hunters, and nearby residents, could be impacted by the potential for increased capability of mosquitoes to transmit disease.

131. Additional concerns documented in Hawaii Unites’ public comment on the draft EA that were not addressed in the final EA include, but are not limited to: lack of EPA registration for the biopesticide mosquitoes (prior to the BLNR’s vote to accept the final EA and issue a FONSI), the potential for the project to cause the extinction of endangered native birds,

biopesticide drift, the specific concerns of tropical disease and vector expert Dr. Lorrin Pang, the effects of *Wolbachia* bacteria as a parasitic organism, lack of identification of agencies responsible for negative outcomes of the project, and conflicts of interest.

132. The final EA suffers from the same fundamental flaws as the draft EA in failing to adequately address potential significant impacts of the project and in failing to address specific potential significant impacts of the project entirely.

133. The final EA suffers from the same fundamental flaws as the draft EA in lack of adequate detail as required by HEPA.

134. The final EA fails to analyze a full range of alternatives and mitigation measures to address potential impacts. The final EA analyzes only the impacts of the proposed action versus a no-action alternative.

135. In contrast, an EIS would not only ensure a full analysis of alternatives and mitigation but would also require “a rigorous exploration and objective evaluation of the environmental impacts of all such alternative actions” and discussion of “mitigation measures proposed to avoid, minimize, rectify, or reduce impacts.” HAR § 11-200.1-24.

136. The final EA/FONSI was published in *The Environmental Notice* on April 8, 2023.²

FIRST CLAIM FOR RELIEF

(Failure to Require an EIS)

137. Plaintiffs reallege and incorporate herein by reference each and every allegation contained in the preceding paragraphs of this complaint.

² Available at the State of Hawaii, Office of Planning and Sustainable Development website: <https://planning.hawaii.gov/erp/environmental-notice/> - last visited on May 7, 2023.

138. Defendants' failure to require an EIS and issue an EISPN for the proposed biopesticide mosquito project violates HEPA's requirement to prepare an EIS if the proposed action "may" have a significant impact on the environment. Based on the significance factors under the HEPA rules, the proposed project certainly "may" have a significant impact on the environment and, thus, requires an EIS.

139. To avoid the requirement to prepare an EIS, the final EA improperly and unlawfully disregarded and distorted the full range of direct, secondary, and cumulative impacts of the proposed project and failed to consider and analyze reasonable alternatives and mitigation measures, in violation of the letter and purpose of HEPA and its implementing rules.

140. An actual controversy exists between Plaintiffs and Defendants concerning Defendants' violation of HEPA in failing to require an EIS and instead accepting only an EA and FONSI.

SECOND CLAIM FOR RELIEF

(Invalid Acceptance of EA/FONSI)

141. Plaintiffs reallege and incorporate herein by reference each and every allegation contained in the preceding paragraphs of this complaint.

142. The BLNR's acceptance of the final EA and FONSI for the proposed biopesticide mosquito project violated the letter and purpose of HEPA.

143. The BLNR failed to follow proper procedure in their addition of Hawaii Unites' petition for a contested case hearing on agenda item C-2 at the March 24, 2023, BLNR meeting to the agenda at the meeting, their subsequent vote to deny the petition, and their subsequent vote to approve the final EA and issue a FONSI at the March 24, 2023, meeting.

144. The action of the BLNR's improper approval of the final EA and issuance of a FONSI, on its face and as applied in this case, violates HEPA. It also violates fundamental requirements of administrative procedure under the Hawai'i Administrative Procedures Act, HRS chapter 91, and due process under article I, section 5 and article XI, sections 1 and 9 of the Hawai'i Constitution.

145. An actual controversy exists between Plaintiffs and Defendants concerning Defendants' violation of HEPA in failing to ensure that environmental concerns are given appropriate consideration by BLNR, the agency tasked with issuing the underlying approval for the project.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs respectfully request that the Court:

1. Enter a declaratory judgment that:
 - (A) The proposed biopesticide mosquito experiment may have a significant impact on the environment;
 - (B) Defendants have violated and are violating HRS Chapter 343 by failing to require an EIS;
 - (C) The BLNR's acceptance of the final EA and FONSI fails to comply with HEPA and its implementing rules and is otherwise legally improper and invalid;
 - (D) Defendants and Applicant be required to prepare an EIS for the proposed biopesticide mosquito experiment and issue an EISPN.
2. Enter appropriate injunctive relief to ensure that Defendants comply with HEPA and to prevent Defendants from issuing approvals for the proposed project or otherwise allowing it to proceed until that compliance occurs;

3. Retain continuing jurisdiction to review Defendants' compliance with all judgments and orders entered herein;
4. Issue such additional judicial determinations and orders as may be necessary to effectuate the foregoing;
5. Award Plaintiffs the cost of the suit herein, including reasonable expert witness and attorneys' fees; and
6. Provide such other and further relief as the Court may deem just and proper to effectuate a complete resolution of the legal disputes between Plaintiffs and Defendants.

DATED: Honolulu, Hawai'i, May 8, 2023.

/s/ Timothy Vandever
MARGARET WILLE
TIMOTHY VANDEVEER

Attorneys for Plaintiffs
Hawaii Unites and Tina Lia

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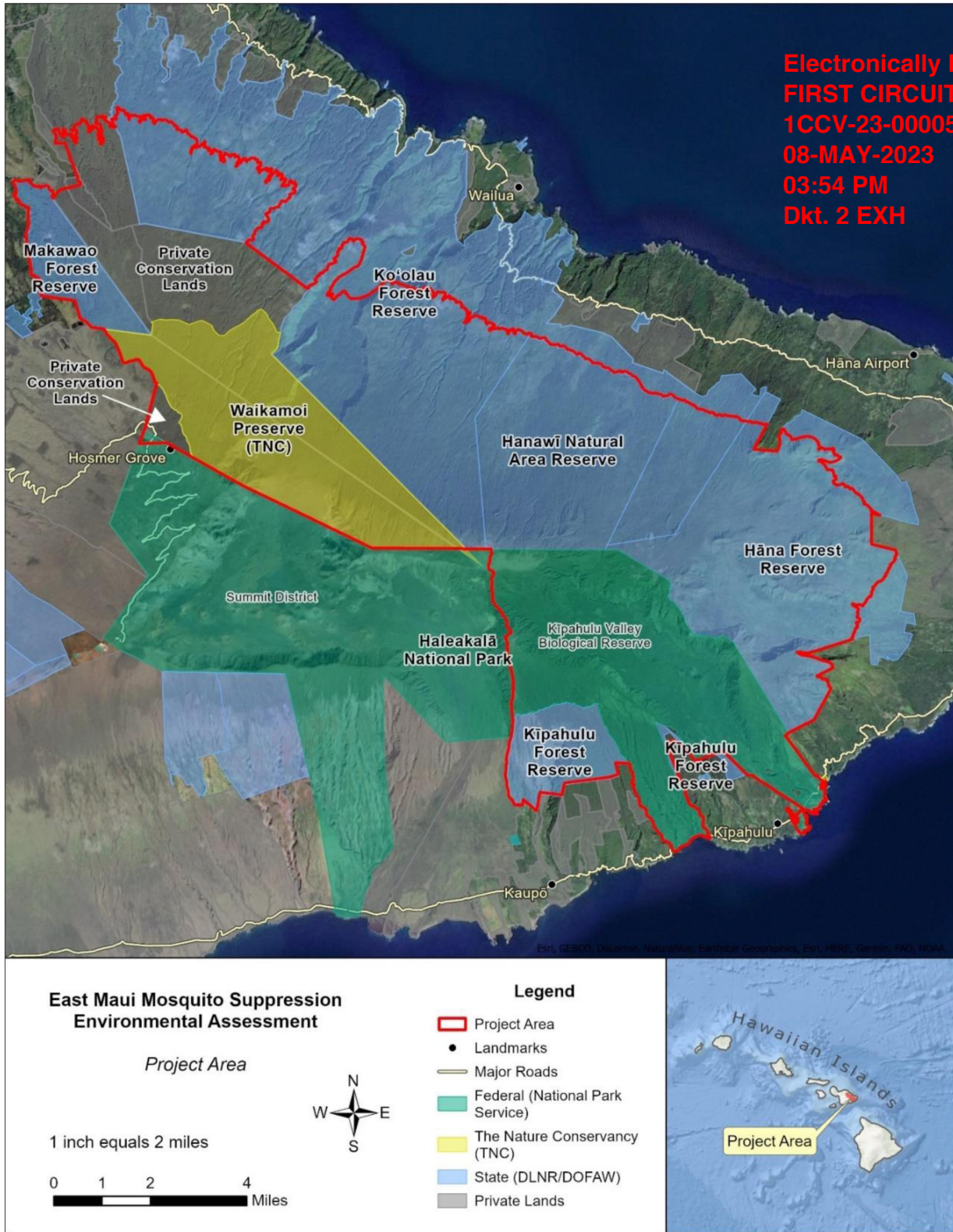


FIGURE 1: PROJECT AREA FOR RELEASE OF INCOMPATIBLE MOSQUITOES

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TABLE 1: PROJECT AREA ACREAGE AND MANAGEMENT

Name	Management	Acres
Haleakalā National Park	NPS	12,042
Ko‘olau Forest Reserve	DLNR/DOFAW	15,179
Hāna Forest Reserve	DLNR/DOFAW	10,679
Hanawī Natural Area Reserve	DLNR/DOFAW	7,713
Kīpahulu Forest Reserve	DLNR/DOFAW	2,318
Makawao Forest Reserve	DLNR/DOFAW	2,100
Waikamoi Preserve (TNC)	TNC	8,606
East Maui Irrigation Company, LLC	Private	4,409
Mahi Pono	Private	1,227
Haleakala Ranch	Private	393
TOTAL		64,666

Table 1 from page 20/284 of “Suppression of Invasive Mosquito Populations to Reduce Transmission of Avian Malaria to Threatened and Endangered Forest Birds on East Maui” (Final Environmental Assessment, Hawai‘i Department of Land and Natural Resources, March 24, 2023)

EXHIBIT B

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TABLE 3. ESTIMATED NUMBER OF DRONE FLIGHT HOURS AND ROUND-TRIP FLIGHTS PER TREATMENT (RELEASING MOSQUITOES AT EACH LOCATION) AND PER WEEK (ASSUMING 2 TREATMENTS PER WEEK) PER LAND MANAGER.

<i>Land Manager</i>	Per Treatment				Per Week			
	warm months		cold months		warm months		cold months	
	hrs	flights	hrs	flights	hrs	flights	hrs	flights
Hawai'i Dept. of Land and Natural Resources	23.2	43	18.2	35	46.5	87	36.4	70
National Park Service	5.5	10	2.9	6	11.0	21	5.9	11
Private	3.4	7	3.0	6	6.7	14	6.1	12
The Nature Conservancy	3.6	7	0.3	1	7.3	14	0.6	1
TOTAL	36	67	24	48	72	134	49	94

Note: Presented in this table are estimated flight information for lower elevations only (2000–4300 ft) during colder months (December–April) when releases at higher elevations are not expected to be needed (“cold months”) and all elevations (2000–5600 ft) within the core area where releases are expected to be needed during warmer months. These elevations are based on thermal limits of the malaria parasite (>55° F) below which transmission from mosquitoes is limited (Ahumada et al. 2004).

Table 3 from page 27/284 of “Suppression of Invasive Mosquito Populations to Reduce Transmission of Avian Malaria to Threatened and Endangered Forest Birds on East Maui” (Final Environmental Assessment, Hawai‘i Department of Land and Natural Resources, March 24, 2023)

EXHIBIT C

<p align="center">STATE OF HAWAI'I CIRCUIT COURT OF THE FIRST CIRCUIT</p>	<p align="center">SUMMONS TO ANSWER CIVIL COMPLAINT</p>	<p align="center">Electronically Filed FIRST CIRCUIT 1CCV-23-0000594 08-MAY-2023 04:22 PM Dkt. 9 PDOC</p>
<p>CASE NUMBER</p> <p align="center">1CCV-23-0000594</p>		
<p>PLAINTIFF'S NAME & ADDRESS, TEL NO. c/o Timothy Vandever, Esq. Margaret Wille & Associates P.O. Box 6398 Kamuela, HI 96743 (808) 388-0660</p>		
<p>PLAINTIFFS</p> <p>HAWAII UNITES, a 501(c)(3) nonprofit corporation; Tina Lia, an individual</p>	<p align="center">vs.</p>	<p>DEFENDANT(S)</p> <p>BOARD OF LAND AND NATURAL RESOURCES, STATE OF HAWAI'I, and DEPARTMENT OF LAND AND NATURAL RESOURCES, STATE OF HAWAI'I</p>
<p>TO THE ABOVE NAMED DEFENDANT(S)</p> <p>You are hereby summoned and required to file with the court and serve upon:</p> <p><u>Timothy Vandever, MARGARET WILLE & ASSOCIATES LLC</u>, plaintiff's attorney, whose address is stated above an answer to the complaint which is herewith served upon you, within 20 days after service of this summons upon you, exclusive of the date of service. If you fail to do so, judgment by default will be taken against you for the relief demanded in the complaint.</p> <p>THIS SUMMONS SHALL NOT BE PERSONALLY DELIVERED BETWEEN 10:00 P.M. AND 6:00 A.M. ON PREMISES NOT OPEN TO THE GENERAL PUBLIC, UNLESS A JUDGE OF THE ABOVE-ENTITLED COURT PERMITS, IN WRITING ON THIS SUMMONS, PERSONAL DELIVERY DURING THOSE HOURS.</p> <p>A FAILURE TO OBEY THIS SUMMONS MAY RESULT IN AN ENTRY OF DEFAULT AND DEFAULT JUDGMENT AGAINST THE DISOBEYING PERSON OR PARTY.</p>		
<p>DATE ISSUED:</p>	<p>CLERK</p>	<p>CIRCUIT COURT CLERK</p>

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