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IN THE CIRCUIT COURT OF THE FIRST CIRCUIT

STATE OF HAWAI'I

HAWAI'I UNITES, a 501(c)(3) nonprofit
corporation; and 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,

and

AMERICAN BIRD CONSERVANCY,

Defendant-Intervenor.

Civil No. 1CCV-23-0000594 (JMT)
(Environmental Court)

**PLAINTIFFS' MEMORANDUM IN
OPPOSITION TO DEFENDANTS
BOARD OF LAND AND NATURAL
RESOURCES, STATE OF HAWAI'I, and
DEPARTMENT OF LAND AND
NATURAL RESOURCES, STATE OF
HAWAI'I'S MOTION FOR SUMMARY
JUDGMENT; DECLARATION OF
COUNSEL; DECLARATION OF TINA
LIA; EXHIBITS A-B; CERTIFICATE OF
SERVICE**

Judge: Hon. John M. Tonaki
Hearing Date: January 17, 2024
Hearing Time: 9:00 a.m.

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MEMORANDUM IN OPPOSITION

I. INTRODUCTION

It has been said that conservationists of the late 19th and early 20th centuries often did the right thing for the wrong reasons¹. In the instant case, it might be said that Defendants the Department of Land and Natural Resources (hereinafter, “DLNR”) and the Board of Land and Natural Resources (“BLNR”, collectively the “State” or “Defendants”) seek to do the wrong thing (allegedly) for the right reasons. No one doubts that trying to save Hawai‘i’s precious native honeycreepers from avian malaria is a right and noble cause. However, in their Final Environmental Assessment (“FEA”) for the proposed action (“Proposed Action” or “Project”), Defendant DLNR, an agency partner of applicant group Birds, Not Mosquitoes (“BNM”) and the accepting agency for the FEA, fails to demonstrate why their Proposed Action – an experiment involving the release of over 800 billion lab-reared *Wolbachia*-bacteria-infected biopesticide mosquitoes in the fragile ecosystems of East Maui – will not have a significant contrary and potentially adverse impact on the environment². See *Plaintiffs’ Complaint* (“*Complaint*”) Docket “Dkt.” No. 1.

In their Complaint and pleadings on file in the case (along with expert scientific opinion and testimony, peer-reviewed studies, and references to the agencies’ own records), Plaintiffs demonstrate that by failing to properly study and disclose the environmental impacts of their

¹ See e.g., “An Unblinking History of the Conservation Movement” by Pakinam Amer – Scientific American (October 21, 2021), which describes a campaign in the early conservation movement to save the American Bison so that hunters would not be deprived of their favorite quarries.

² Though the FEA is unclear as to exactly how many mosquitoes will be released, this number is based on Plaintiffs’ best calculation of the highest frequency of release from the information that has been made available (6,000 mosquitoes twice a week, per acre, per release location – totaling 775,992,000 mosquitoes weekly over a period of 20 years, or over 807 billion mosquitoes).

Proposed Action, Defendants are potentially doing the wrong thing and in so doing, are endangering the very birds that they seek to protect. Indeed, the potential ramifications for Defendants' experiment could be far-reaching and pose serious risks to native birds, wildlife, the 'āina, and human health. *Complaint* at ¶ 2. Without a proper study and mitigation plan, the public and decision-makers are left in the dark.

To be clear, Plaintiffs are simply asking the Court to require Defendant DLNR and their agency partners to properly study the Proposed Action in the form of an environmental impact statement ("EIS") before moving forward. Had Defendants recognized the potential for significant impacts to the environment and initially chosen to conduct an EIS, they would likely have already completed it by now and the public and decision-makers would have a full set of facts from which to evaluate the impacts of the Proposed Action. Instead, the State has gotten the process exactly backwards - launching an aggressive public relations campaign, dismissing concerns expressed by the community (often personally attacking those who raise such concerns), rushing through an EA, and most recently asking this Court to grant summary judgment. The Defendants' cursory dismissal of the precautionary principle and cynical interpretation of the spirit and letter of the Hawai'i Environmental Policy Act ("HEPA"), Hawai'i Revised Statutes ("HRS") Chapter 343, should give this Court pause and be a warning to those who wish to protect our state's environmental resources.

Defendants' Motion for Summary Judgment ("Motion") should be denied not only because of the numerous material facts in dispute and because discovery in the case has not been completed, but also because Defendant DLNR failed to properly follow Hawai'i Administrative Rules ("HAR") in compiling their FEA, and Defendant BLNR improperly accepted the flawed document and issued a FONSI.

II. LEGAL STANDARD

Summary judgment is a “drastic remedy.” *GECC Fin. Corp. v. Jaffarian*, 79 Haw. 516, 521, 904 P.2d 530, 535 (1995). It must be applied “cautiously” to avoid improperly depriving a party to a lawsuit of the right to trial on disputed factual issues. *Miller v. Manuel*, 9 Haw.App. 56, 65–66, 828 P.2d 286, 292 (1991). Any doubts concerning the propriety of granting the motion should be resolved in favor of the non-moving party. *IndyMac Bank v. Miguel*, 117 Haw. 506, 519, 184 P.3d 821, 834 (Ct. App. 2008), as corrected (July 17, 2008). Summary judgment is only appropriate “if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law.” *Tri-S Corp. v. W. World Ins. Co.*, 110 Haw. 473, 487, 135 P.3d 82, 96 (Haw. 2006).

The moving party has the burden of producing support for its claim that there is (1) no genuine issue of material fact with respect to the “essential elements of the claim or defense” and that (2) based on undisputed facts the moving party is entitled to summary judgment as a matter of law. *Id.* Likewise, the burden of persuasion that summary judgment is appropriate “always remains with the moving party.” *Celotex Corp. v. Catrett*, 477 U.S. 317, 332, 106 S.Ct. 2548, 2557, 91 L.Ed.2d 265 (1986).

In this case, Defendants have not met their burden of production or persuasion.

III. DISCUSSION

On May 8, 2023, Plaintiffs filed their Complaint for Declaratory and Injunctive Relief. Plaintiffs filed a Motion for Preliminary Injunction (Dkt. No. 37) on June 20, 2023. The parties briefed the matter and a hearing on Plaintiffs’ Motion for Preliminary Injunction started on July 21, 2023. Plaintiffs’ presented testimony from two witnesses, expert witness Dr. Lorrin Pang

(“Dr. Pang”) and Plaintiff Tina Lia (“Plaintiff Lia”), then rested³. The State and Defendant-Intervenor American Bird Conservancy (“Defendant ABC”) began the presentation of their defense with a live witness who began to dispute some of the material facts presented in Plaintiffs’ case, but due to time constraints, the Defendants were unable to finish their case⁴. On December 30, 2023, Plaintiffs filed their first discovery requests on Defendants. *See* Dkt. Nos. 198, 199.

As Plaintiffs point out in their Complaint and pleadings on file, including in their Memorandum in Support of their Motion for Preliminary Injunction (“Injunction Memo”), one of the primary goals of HEPA is to provide agencies with sufficient information in order to make an informed decision. *See* HRS § 343-1. It is this lack of complete and accurate information that Plaintiffs assert is missing from the EA and thus warrants further study through an EIS. In making this assertion, Plaintiffs acknowledge that the EA is not an exhaustive examination of every possible environmental event but insist that an EA must provide sufficient evidence and analysis to determine the reasonableness of the decision as to whether an applicant should prepare an EIS or not. *See Friends of the Wild Swan v. Weber*, 767 F.3d 936, 942 (9th Cir. 2014). Plaintiffs argue that in the instant case, the evidence is insufficient, material facts are in dispute, and - especially for a project of this size and magnitude - further study is required.

Defendant DLNR’s FEA does not contain sufficient information to allow the approving agency, (also the DLNR), to take a “hard look” at the potential environmental consequences of the Proposed Action. By ignoring peer-reviewed studies and potential alternatives, Defendants

³ **Exhibit A** contains excerpts from the transcript from the on July 21, 2023 hearing on Plaintiffs’ Motion for Preliminary Injunction. Page number references are to the page number listed on the bottom righthand corner of the document.

⁴ The hearing on Plaintiffs’ Motion for Preliminary Injunction has been continued to February 7-8, 2024.

gave an incomplete or misleading picture of what those consequences might be. The failure to provide mitigation protocols prevents that approving agency from grasping how an accident (in particular, the threat of horizontal transmission or “sweep” of the *Wolbachia* bacteria) might be contained. This runs contrary to the letter and spirit of HEPA, specifically because it renders the agency’s application of the significance criteria fundamentally flawed since they are using incomplete and misleading data. This is tantamount to insufficient evidence and analysis to determine the reasonableness of the decision not to prepare an EIS.

A. The FEA Was Insufficient Under Chapter 343

In their Motion, Defendants appropriately note that an EA “must include the following: (1) a detailed description of the proposed action or project; (2) an evaluation of the direct, indirect, and cumulative impacts; (3) a discussion of alternatives to the proposed project or action; and (4) a description of any measures proposed to minimize potential impacts” (citing *Kilakila ‘O Haleakala v. Univ. of Hawai‘i & David Lassner*, 138 Hawai‘i at 370, 382 P.3d at 182 (2016)) and HAR 11-200.1-13. *See* Motion at pgs. 6-7. However, Defendants incorrectly surmise that the sole “purpose” of an EA is “to be concise and less comprehensive than an EIS,” thus serving as its own justification for not needing an EIS. Defendants seem to ignore the purpose of the information that the EA is supposed to contain, that is, to assess whether more study (i.e. an EIS) is necessary. This goes to the two main prongs of HEPA: to foster public participation and to inform decision-makers. *See* HRS § 343-1. Instead of focusing on the substance of the FEA and whether it provided a sufficient evaluation of the impacts, a discussion of alternatives, and a description of measures to minimize said impacts, in their Motion Defendants assert that the DLNR’s conclusory statements regarding “no impact” somehow “[meets] the [HAR significance] criteria,” thereby excusing the need to actually comply with the

substantive requirements of the criteria itself. *See Motion* at pgs. 10, 14. Plaintiffs argue that when the information is missing (*see Complaint* at ¶¶ 94, 118), inaccurate (*Id.* at ¶¶ 121-122), or misleading (*Id.* at ¶ 113), as it is in the instant case, decision-makers (the accepting agency) are unable to properly determine whether the proposed action will have a significant impact on the environment and requires further analysis through an EIS.

As discussed in *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1194 (9th Cir. 2008), in the context of the NEPA, the Court must take a hard look in order to “determine whether the EA foster[s] both informed decision-making and informed public participation” (citations omitted), or alternatively, whether a more in-depth evaluation is required by way of an EIS. And as explained in *Sierra Club v. Off. of Plan., State of Haw.*, 109 Haw. 411, 126 P.3d 1098 (2006), the appropriate time for preparing an EIS is *prior* to a decision, when the decisionmaker retains a maximum range of options. *Id.* at 1106. Therein, the Court also underscored the importance of ensuring a sufficient early environmental assessment because “after major investment of both time and money, it is likely that more environmental harm will be tolerated.” *Ibid.*

To support their Motion, Defendants rely on several flawed conclusions. For example, Defendants accuse Plaintiffs of trying to “sound the alarm on decades of principled scientific research and previous peer-reviewed studies on the effectiveness and safety of using IIT” (*Motion* at pg. 6), when Plaintiffs have repeatedly pointed out that this specific IIT technique planned for use is experimental and has never been studied for efficacy or safety and that the East Maui project area is the largest *Wolbachia* mosquito release of any kind globally to date⁵.

⁵ In their Motion, Defendants refer to IIT as “incompatible insect technology” when the abbreviation actually stands for “incompatible insect technique”. This is either a misstatement of

See *Complaint* at ¶¶ 85, 122. Defendants also repeat the myth that *Culex* mates only once (*Motion* at pg. 2), when studies show that they can mate twice in the first 48 hours⁶. Third, Defendants state that *Wolbachia* is already naturally present in *Culex quinquefasciatus* mosquitoes in Hawai‘i, when Plaintiffs have repeatedly pointed out that the introduced wAlbB strain is a foreign bacteria originating from Kuala Lumpur in Malaysia that is not present in Hawai‘i and the wPip4 strain approved for import in connection with this project does not exist in Hawai‘i. See *Complaint* at ¶ 121. Fourth, Defendants assert that *Wolbachia* cannot be transferred to humans, when another study has shown that there is at least one instance when *Wolbachia* transfer to humans occurred⁷.

Defendants further ignore the testimony of Plaintiffs’ witness Dr. Lorrin Pang (“Dr. Pang”), who raises serious questions regarding the relevancy of the studies upon which Defendants base their conclusions, the failure to support their conclusions by “showing their work” through math modeling, and also the peer-reviewed studies that call into question Defendants’ methods and conclusions – studies that have not been properly addressed or have been disregarded. See *Exhibit “Ex.” A (testimony of Dr. Pang)* at pgs. 86:20-25; 87:1-24. As discussed below, Defendants also misrepresent Plaintiff Tina Lia’s (“Plaintiff Lia”) testimony and fail to acknowledge that she is only *one* of the Plaintiffs in the case. Defendants make no

relevant facts or an attempt to broaden the scope of the proposed action to include unspecified technology not included in the FEA.

⁶ See *Figure 1* in “*The Insemination Rates of some Anopheline and Culicine Populations in the Makurdi Area of Benue State, North Central Nigeria.*” by Manyi et al, *International Journal of Scientific and Research Publications*, Volume 4, Issue 10, (October 2014) available at: <https://www.ijsrp.org/research-paper-1014/ijsrp-p3474.pdf> (last visited on January 8, 2024).

⁷ See “*Detection of Wolbachia genes in a patient with non-Hodgkin’s lymphoma*” by X-P. Chen et al in *The Clinical Microbiology and Infection*, Volume 21, Issue 2, February 2015, Pages 182.e1-182.e4 available at: <https://www.sciencedirect.com/science/article/pii/S1198743X14000408> (last visited on January 8, 2024).

arguments regarding other members of Hawai'i Unites' comments to the FEA. *See Motion generally.*

1. Impacts of the Project

Defendants assert that their Motion should be granted on the sole reason that Plaintiffs list the significance criteria and then don't allege that Defendants failed to meet any of the criteria. *See Motion* at pgs. 5, 10. Though Plaintiffs are not required to specifically match concerns with the criteria individually, and do not use the "magic words" that Defendants suggest are necessary when describing the ways that the applicants violated the significance criteria, Plaintiffs list numerous ways that Defendant DLNR's proposed experiment fails to meet those criteria, including through the potential for unexpected, dangerous, irreversible "evolutionary" events, something that is especially true when the new organisms cannot be contained to their target ecosystems. This includes:

- the possibility of horizontal transmission of the *Wolbachia* bacteria through mating, shared feeding sites, and serial predation – *Complaint* at ¶ 88;
- the possibility for increased pathogen infection and disease spreading capability of *Wolbachia*-infected mosquitoes – *Complaint* at ¶ 89;
- the possibility of "sweep" of the existing mosquito population with the introduced *Wolbachia* strain through mating and evolutionary events - *Complaint* at ¶ 93;
- the possibility of venereal transmission of viruses from male mosquitoes to female mosquitoes - *Complaint* at ¶ 99;
- the increase in horizontal transmission when vertical transmission is suppressed – *See Complaint* at ¶ 112;
- the accidental release of misidentified lab-reared female mosquitoes that bite, breed, and spread disease – *Complaint* at ¶ 113;
- the susceptibility of the mark release recapture studies and Project actions to biopesticide wind drift (something that is not addressed at all in Defendant DLNR's FEA) *Complaint* at ¶ 118;
- superinfection of the *Culex quinquefasciatus* ("*Culex q.*") mosquitoes with multiple strains of *Wolbachia*.

See also Injunction Memo at pgs. 13-18; *Injunction Memo. Ex. 10* at pgs. 1-6; *Ex. A (testimony of Dr. Pang)* at pgs. 44:23-25 – 45:1-19; 55:9-25 – 56:1-15; 90:20-25 – 91(all), 92(all), 93:11-21; 42:25 – 43:6-17; 94:7-11.

Plaintiffs also explain that the effects of *Wolbachia* are highly specific to the strain of *Wolbachia*, the type of host, the targeted action, and the manner of inoculation (laboratory or natural); and that the FEA fails to mention that the imported *Wolbachia* bacteria strain disclosed for use in this biopesticide is a foreign bacteria originating from Kuala Lumpur, Malaysia, that the bacteria strain wPip4 approved for import in connection with this project does not currently exist in Hawai‘i, and that no studies have been done to confirm that the imported *Wolbachia* bacteria strains imported in connection with this project (wAlbB, wAlbA and wPip4) are not currently present within the corresponding *Culex q.* species of Hawai‘i’s established mosquito population. *See Injunction Memo Ex. 10* at pg. 1.

These are hardly conjectural concerns. Plaintiffs detail how these concerns potentially curtail the range of beneficial uses of the environment (*Complaint* at ¶ 8), have substantial adverse effects on public health (*Id.* at ¶ 119), involve adverse secondary impacts (*see Id.* at ¶ 100), involve a substantial degradation of environmental quality (*Id.* at ¶ 139), and have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat (*Id.* at ¶ 102). In support of these assertions involving likely significant effect on the environment, Plaintiffs also note that these mechanisms can interact with each other (cumulatively have substantial adverse effects upon the environment) and that there has been insufficient study in each area of concern and in the combination of mechanisms (*see Complaint* at ¶¶ 117, 125; *see also Injunction Memo Ex. 10* at pg. 6).

Contrary to Defendants’ assertion that Plaintiff Lia “admitted” that the FEA evaluated the impacts she was concerned about (*Motion* at pg. 9, citing the hearing transcript at pgs. 175-176), on cross-examination, Plaintiff Lia confirmed that the concerns she raised as comments to the Draft EA were not clearly addressed in the Final EA and that Defendant’s “evaluation of impacts” instead were simply listed as identified topics in Appendix H. *See Ex. A (testimony of Plaintiff Lia)* at pg. 182:3-24⁸.

Further, the possibilities of biopesticide drift, or the movement of the lab-bred mosquitoes through wind to unintended areas - a very real threat of wild mosquitoes drifting into the Project area and diluting the efficacy of the IIT (requiring a need to maintain higher proportions of the experiment), along with the threat of IIT mosquitoes drifting out of the Project area (increasing the threat of horizontal transmission) - are not addressed in the FEA at all. This material fact regarding proposed impacts from the experiment on the environment was raised in the Complaint and by Dr. Pang and Plaintiff Lia and never addressed by Defendants. *Complaint* at ¶¶ 94, 118; *Ex. A (testimony of Dr. Pang)* at pgs. 91-92, 93:11-21; (*testimony of Plaintiff Lia*) at pgs. 136:5-25 – 137:1; *see generally, FEA*.

2. The FEA Does Not Sufficiently Describe Mitigation Measures

Defendants allege that they have provided “discussion with sufficient detail to ensure that environmental consequences have been fairly evaluated,” and that “all that is required is that the EA describe proposed mitigation measures” (citing *Kilakila*, 138 Hawai‘i at 370, 382 P.3d at 182). *See Motion* at pg. 12. Defendants further point to the potential impacts of the Proposed Action discussed in Section 3 of the FEA and the significance of the potential impacts of the

⁸ A discussion of Defendants’ failure to clearly address the public’s comments and concerns pursuant to HAR Sec. 11-200.1-20 follows below.

Project discussed in Appendix G of the FEA. *Motion* at pg. 8. In the Section and Appendix, however Defendants include detailed discussion on such topics as drones and the biodegradable containers used in the experiment but remain silent as to mitigation measures for possible horizontal transmission of *Wolbachia*. Further, the FEA does not address the concern of accidental pathogen introduction, and Defendant DLNR ignores any discussion regarding a comprehensive plan for biosecurity protocols, specifically in the event that the *Wolbachia* behaves in any manner described above. *See FEA generally; Injunction Memo* at pg. 19; *Testimony of Dr. Pang* at pgs. 93:22-25 – 94:1-6. This oversight, whether purposeful or not, is important because peer-reviewed studies have shown *Wolbachia* bacteria in mosquitoes can result in increased pathogen infection and can cause mosquitoes to become more capable of spreading diseases such as avian malaria, and West Nile virus that can infect birds and humans, meaning that horizontal transmission has the potential to cause the extinction of endangered native birds and could impact human health. *Complaint* at ¶ 89; *Ex.1 (testimony of Dr. Pang)* at pg. 38:12-24; 39:6-11.

3. Inadequate Discussion of Alternatives in the FEA

In their Motion, Defendants present the issue pertaining to the adequacy of the FEA as a binary choice: 1) the experiment goes forward or 2) native birds go extinct. *See Motion* at pgs. 1, 11. This oversimplification is problematic not only because it presents a false choice but also because it cuts off questions that should be asked regarding the potential efficacy and negative impacts of the only remaining option. Defendants contend that DLNR considered and dismissed without further analysis other alternatives because “they were not viable” (previously citing to the FEA at pg. 276). *Defendants’ Opposition (“Opp.”) to Plaintiffs’ Motion for Preliminary Injunction* (Dkt. No. 103) at pg. 17. However, the FEA at 276 does not address the viability of

alternatives. The alternatives discussed on pages 111-116 of the FEA are instead “Alternatives *Potentially* Considered but Dismissed from Further Consideration” (emphasis added). These are not actions proposed as alternatives for agency consideration but instead alternatives mentioned by the applicant as an afterthought. Defendants’ brief discussion offered in these pages does not cure the inadequacies of the Proposed Action as analyzed in the FEA. *See W. Watersheds Project v. Abbey*, 719 F.3d 1035, 1052 (9th Cir. 2013).

Defendants also assert in their Motion that Plaintiffs “argue the EA did not consider the full range of alternatives but do not identify any they think the agency failed to address.” *Motion* at pg. 11. This is also inaccurate. Plaintiffs’ expert witness Dr. Pang mentioned viable options in his testimony, including treating malaria in the mosquito phase through blood source feeding, and the use of irradiation in combination with *Wolbachia* IIT. *See Ex.1 (testimony of Dr. Pang)* at pg. 112:9-25, 113(all)-114:1-8. Dr. Pang’s testimony regarding alternatives goes to both impacts and efficacy of the Proposed Action.

B. Defendants’ Failure to Comply with Hawai‘i Law

1. Hawai‘i Administrative Rules

Perhaps the only undisputed facts (besides all parties’ acknowledgment that native honeycreepers are worth saving) are that Defendants failed to properly comply with the Hawai‘i Administrative Rules in compiling their FEA and that Defendant BLNR accepted this flawed document, improperly issuing a FONSI. In their Motion, Defendants conveniently omit this material fact and, as of this filing, have not offered any refutation thereof. Instead, Defendants have responded to Plaintiffs’ assertions in two ways: 1.) by alleging that Plaintiffs cite to a repealed rule and that the current rules do not require what Plaintiffs contend (*see Defendants’ Opp. to Plaintiffs’ Motion for Preliminary Injunction* at pg. 20) and 2.) by asking a line of

questioning of Plaintiff Tina Lia in the Preliminary Injunction hearing that suggests that the State Defendants acknowledge that they failed to follow the HAR but believe that the rules were irrelevant as long as Plaintiff Lia was able to figure out what the applicant was trying to do in their FEA. *See Transcript Testimony of Plaintiff Lia* at pgs. 171:10-25 – 178:1-7.

First, the State Defendant’s allegation of the repealed rule is misleading and inaccurate. Though Plaintiffs did cite to the old rule in their Motion for Preliminary Injunction, Plaintiffs cite to the current rule (HAR Sec. 11-200.1-20) correctly in numerous places and correctly describe the rules that proposing agencies and applicants shall follow. *See Injunction Memo* at pg. 17. Further, Plaintiffs correctly point out that though Defendant DLNR appears to have chosen the first response method listed (grouping comments by topic and issue), Defendants did not comply with the HAR as required, including by failing to:

- include the comments that they received as a part of each response (required regardless of the response method chosen)
- append the comments in full to their FEA; and
- clearly identify the names of commenters who raised the issue addressed in a distinctly labeled section with the topic heading.

See FEA generally; Injunction Memo at pgs. 17-18.

Defendant DLNR’s failure to follow the administrative rules and Defendant BLNR’s acceptance of the final EA for the proposed biopesticide mosquito Project and issuance of a FONSI based on that flawed document violated the letter and purpose of HEPA.

2. Improper Segmentation

The exemption notice for the mark release recapture (“MRR”) studies did not cover Makawao Forest Reserve parcel, but instead covered other land parcels in the Project area. It is

believed that Makawao Forest Reserve is where the mark release recapture studies occurred in May 2023 and June 2023. *See Declaration (“Dec.”) of Tina Lia* at ¶ 4. This would mean that the DLNR is relying on the FEA’s Project area, which does include Makawao Forest Reserve as a parcel. The FEA fails to describe the mark release recapture studies as a proposed action, and the exemption notice fails to identify the land parcel where the studies occurred. The use of Makawao Forest Reserve, a parcel not identified in the exemption notice, as a MRR study area indicates that the individual action of the study in an FEA Project area parcel was a necessary precedent to the larger action of the Project and thus may have been improperly segmented under HAR § 11-200.1-10 – “Multiple or phased actions”. *See Injunction Memo. Ex. 5* at pgs. 10-16.

C. Additional Material Facts

Defendants request for summary judgment also comes before discovery has been completed and thus is inappropriate at this juncture. This is evidenced by additional material facts that have been discovered since the filing of the Complaint that suggest a project being carried out in a manner contrary to what was proposed, explained, and/or studied in the FEA.

Drone Release

Though Defendants assert that the EA discusses how the effect on the acoustic environment will be mitigated and minimized by careful planning of flight paths and timing of mosquito releases (*see Motion* at pg. 18), based on information and belief, mosquito release via drone, supposedly the primary release method per the FEA, have not occurred thus far. *Dec. of Tina Lia* at ¶ 5. This is significant because release by helicopters rather than drones deviates from the plan. The EA repeatedly notes the anticipated noise disturbances and potential significant impacts of those disturbances, with the focus being on drone releases. This deviation increases the frequency for the only other alternative for release of mosquitoes - that is via

helicopter flights – which were only proposed and studied over the “short term” for an interval of “up to two months.” *See FEA* at pg. 8.

The impacts of long-term release via helicopter were not properly studied and appear to have already been significantly modified based on the release method estimations detailed in the FEA.

Helicopter Longline Release

The system described in the FEA for release of mosquitoes from helicopters does not appear to be the system in use. *See FEA* pg. 12; *Dec. of Tina Lia* at ¶ 6. Based on the low altitude of the flights, it appears that Defendants are not using a longline cable attached to the belly hook of the helicopter to drop the mosquito packages. It is unclear what method the Defendants are using to drop the mosquitoes from the helicopters, but it is believed that the helicopters are flying closer to the tree canopy than the 150 to 200 feet AGL (above ground level) than was stated in the FEA⁹. *See Dec. of Tina Lia* at ¶ 7. This is important because it deviates from the approved plan and increases the potential for adverse impacts such as noise disturbances; nesting, breeding, and roosting disturbances; helicopter rotor wash; accidents and collisions; and wildland fires.

Mosquito Monitoring

FEA Chapter 2: “Alternatives” mentions the use of battery-operated mosquito traps, but it doesn’t say anything about the type of batteries. *See FEA* at pgs. 13-14. Based on information and belief, these are 12V deep cycle batteries. *Dec. of Tina Lia* at ¶ 8. Transporting these “hazardous materials” brings additional fire risks, as evidenced by an accidental fire cause by

⁹ Attached hereto as Exhibit B are what is believed to be Mosquito Release Helicopter Flight Tracking from the website flightaware.com.

one of the “action packers” containing a battery on September 22, 2023¹⁰. This is important because there isn’t any discussion in the FEA on mitigating risks of hazardous materials used in mosquito monitoring.

Female Release

The FEA fails to disclose the documented allowable accidental female release rate of one female for every 250,000 males. The Hawai‘i Department of Agriculture (“HDOA”) Environmental Protection Agency (“EPA”) Application for Section 18 Federal Insecticide, Fungicide, and Rodenticide Act (“FIFRA”) Emergency Exemption use of the “DQB Males” *Wolbachia* mosquitoes for the Project, the DLNR HDOA request to import mosquitoes for the Project, and EPA guidelines for *Wolbachia* IIT biopesticide mosquitoes all document the allowable accidental female release rate of one female for every 250,000 males. Based on the EPA guidelines, this would cause a total of up to 3,103 females per week to be released by BNM as a result of the Project. It is undisputed that female mosquitoes bite, breed, and spread disease.

IV. CONCLUSION

For the foregoing reasons, Plaintiffs respectfully ask this Court that Defendants’ Motion for Summary Judgment be DENIED.

DATED: Honolulu, Hawai‘i, January 9, 2024.

/s/ Timothy Vandever

Timothy Vandever
Margaret Wille

Attorneys for Plaintiffs
Hawai‘i Unites and Tina Lia

¹⁰ This accidental fire is described in an Aviation Safety Communique that can be found at: <https://www.safecom.gov/safecom/23-1026> (last visited on January 8, 2024).

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FIRST CIRCUIT
1CCV-23-0000594
09-JAN-2024
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Dkt. 202 DEC

IN THE CIRCUIT COURT OF THE FIRST CIRCUIT

STATE OF HAWAI'I

HAWAI'I UNITES, a 501(c)(3) nonprofit
corporation; and 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,

and

AMERICAN BIRD CONSERVANCY,
Defendant-Intervenor.

Civil No. 1CCV-23-0000594 (JMT)
(Environmental Court)

DECLARATION OF COUNSEL

Judge: Hon. John M. Tonaki
Hearing Date: January 17, 2024
Hearing Time: 9:00 a.m.

DECLARATION OF TIMOTHY VANDEVEER

I, TIMOTHY VANDEVEER, under pain of perjury of law, do hereby state and declare as follows:

1. I am an adult resident of the State of Hawai'i.
2. I am licensed to practice law in the State of Hawai'i.
3. I am a member of the law firm of Margaret Wille & Associates LLLC, and one of the attorneys for Plaintiffs Hawai'i Unites and Tina Lia in the above-captioned case.

AUTHENTICATION

1. Attached hereto as **Exhibit A** is a true and correct copy of a true and correct copy of the portions of the cited-transcript from the Preliminary Injunction Hearing on July 21, 2023.

FURTHER DECLARANT SAYETH NAUGHT

This Declaration is based upon my personal knowledge or as otherwise indicated, and I am competent to testify as to the truth of the statements contained herein.

DATED: Honolulu, Hawai'i, January 9, 2024.

Signed: /s/ *Timothy Vandever*
Timothy Vandever

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Electronically Filed
FIRST CIRCUIT
1CCV-23-0000594
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IN THE CIRCUIT COURT OF THE FIRST CIRCUIT

STATE OF HAWAI'I

HAWAI'I UNITES, a 501(c)(3) nonprofit
corporation; and 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,

and

AMERICAN BIRD CONSERVANCY,
Defendant-Intervenor.

Civil No. 1CCV-23-0000594 (JMT)
(Environmental Court)

DECLARATION OF TINA LIA

Judge: Hon. John M. Tonaki
Hearing Date: January 17, 2024
Hearing Time: 9:00 a.m.

DECLARATION OF TINA LIA

1. I am a resident of the County of Maui in the State of Hawai‘i.
2. I am over the age of eighteen (18).
3. I am the founder and current Board President of Plaintiff Hawai‘i Unites and also an individual Plaintiff in the above-captioned case.
4. Based on information and belief, the Makawao Forest Reserve is where the mark release recapture studies occurred in May 2023 and June 2023.
5. Based on information and belief, mosquito release via drone (as described in the FEA) have not occurred thus far.
6. Based on information and my personal observations, the system described in the FEA for release of mosquitoes from helicopters (longline cable attached to the belly hook of the helicopter) does not appear to be the system in use
7. Based on my review of what I believe to be Mosquito Release Helicopter Flight Tracking from the website flightaware.com, the helicopters appear to be flying closer to the tree canopy than the 150 to 200 feet AGL (above ground level) than was stated in the FEA.
8. Based on information and belief, the battery-operated mosquito traps mentioned in FEA Chapter 2: “Alternatives” are 12V deep cycle batteries.

AUTHENTICATION

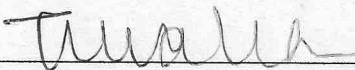
1. Attached hereto as **Exhibit B** is a true and correct copy of screenshots showing Helicopter Flight Tracking from the website flightaware.com as well as a spreadsheet showing dates, helicopter tail numbers, locations, departure and arrival times and flight duration.

FURTHER DECLARANT SAYETH NAUGHT

This Declaration is based upon my personal knowledge or as otherwise indicated, and I am competent to testify as to the truth of the statements contained herein.

DATED: Kīhei, Maui January 9, 2024.

Signed: _____


Tina Lia

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IN THE CIRCUIT COURT OF THE FIRST CIRCUIT

STATE OF HAWAI'I

Electronically Filed
FIRST CIRCUIT
1CCV-23-0000594
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HAWAII UNITES, a 501(c)(3))
nonprofit corporation; Tina Lia,)
an individual,)
)
Plaintiffs,)
)
vs.)
)
BOARD OF LAND AND NATURAL)
RESOURCES, STATE OF HAWAI'I, and)
DEPARTMENT OF LAND AND NATURAL)
RESOURCES, STATE OF HAWAI'I,)
)
Defendants.)
)
and)
)
AMERICAN BIRD CONSERVANCY,)
)
Defendant-Intervenor)
)
_____)

CIVIL NO. 1CCV-23-0000594

TRANSCRIPT OF AUDIO RECORDING

Plaintiffs' Motion Temporary Restraining Order

for Preliminary Injunction

BEFORE HONORABLE JOHN TONAKI, JUDGE

Friday, July 21, 2023

Day 1, Pages 1 through 214

TRANSCRIBED BY: MARY ANNE YOUNG, RPR, CSR No. 369

EXHIBIT A

1 APPEARANCES:

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14 FOR DEFENDANT-INTERVENOR:

15 ATTORNEY AT LAW
16 BY: MAXX ELIZABETH PHILLIPS, ESQ.
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18 1164 Bishop Street
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I N D E X

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PLAINTIFFS' WITNESS:

LORRIN W. PANG, M.D.

EXAMINATION:	PAGE
By Mr. Vandever	11, 38, 126
By Ms. Steed	24, 119
By Mr. Frankel	32, 125

TINA LIA

EXAMINATION:	PAGE
By Mr. Vandever	127, 182
By Ms. Steed	171
By Mr. Frankel	180

DEFENDANTS WITNESS:

NICOLE FERGUSON

EXAMINATION:	PAGE
By Ms. Steed	185

1 MR. VANDEVEER: Thank you, your Honor.

2 JUDGE TONAKI: Okay. Go ahead.

3

4 DIRECT EXAMINATION (Continued)

5 BY MR. VANDEVEER:

6 Q Dr. Pang, is there any current literature
7 related to your expert opinion regarding the risks of
8 tropical disease transmission in this case?

9 MR. FRANKEL: Objection. It goes beyond the
10 scope of his field.

11 JUDGE TONAKI: Overruled.

12 THE WITNESS: Yeah, there is a publication on
13 this project that should our mosquito, the one that
14 could transmit West Nile Virus, should it pick up
15 Wolbachia by mistake through this project, that mosquito
16 culex could be up-regulated, increased risk of
17 transmitting West Nile Virus. That's a little
18 counterintuitive. Most of the time the mosquitoes, when
19 they get Wolbachia, the diseases they transmit, you
20 know, dengue and things like that, go down, but for West
21 Nile Virus, a human disease, we're a little worried that
22 our mosquito with culex, which transmit that, might
23 transmit more if it gets Wolbachia. There's a
24 publication on that.

25

1 BY MR. VANDEVEER:

2 Q Can you summarize the literature you relied
3 upon?

4 A It was a cross reference of your -- one of
5 your exhibits. It -- sorry. It's the exhibit itself 9,
6 10, 11, 12, 13 -- I think it's Exhibit 13, West Nile
7 Virus that sometimes Wolbachia will up-modify it, and
8 they got in a discussion whether that Wolbachia was
9 acquired in the lab or naturally transmitted. That has
10 yet to be defined how the mosquito culex got Wolbachia
11 to up-regulate West Nile Virus.

12 Q Okay. So let me just back up just a bit,
13 Dr. Pang. Have you had the opportunity to review the
14 documents related to this case?

15 A Yes. Well, the ones you gave me.

16 Q What documents have you reviewed?

17 A P 9, 10, 11, 12, 13, 14.

18 Q Sorry. In -- not speaking as a the exhibit
19 numbers, let me just ask you specifically: Have you
20 reviewed the environmental assessment?

21 A Oh, yeah, yeah.

22 Q Have you reviewed any emergency exemptions?

23 A No. I mean, I glossed over them. I focused
24 on the exhibits, but -- I mean, the scientific articles.

25 Q How did you choose what to review?

1 too broad, beyond the scope of his field.

2 JUDGE TONAKI: Sustained.

3 BY MR. VANDEVEER:

4 Q In the documents that you reviewed, did you
5 find any explanation as to what horizontal transmission
6 would occur?

7 MR. FRANKEL: Objection, your Honor. Goes
8 beyond the scope of his --

9 JUDGE TONAKI: Overruled.

10 THE WITNESS: Sorry. Can you repeat the
11 question? I was trying to listen to what he said.

12 BY MR. VANDEVEER:

13 Q Certainly. In the documents that you
14 reviewed, did you find any explanation as to horizontal
15 transmission as a result of this project?

16 A In the discussions, because I was asked to
17 meet with the experts from their side, and they admitted
18 horizontal transmission could occur, but it would occur
19 on an evolutionary scale.

20 MR. FRANKEL: Objection. Non-responsive.

21 JUDGE TONAKI: Overruled.

22 MR. FRANKEL: Move to strike.

23 JUDGE TONAKI: Overruled.

24 BY MR. VANDEVEER:

25 Q Can you explain what horizontal transmission

1 is?

2 MR. FRANKEL: Objection, your Honor. This
3 is -- horizontal transmission --

4 JUDGE TONAKI: Overruled.

5 MR. FRANKEL: Okay.

6 THE WITNESS: Horizontal transmission, the
7 transmission of Wolbachia or any other germ can go
8 vertically to the offspring and propagate that way,
9 offspring to offspring, or it can go horizontally not to
10 the offspring but to the -- let's say -- sexual partner
11 or to your dog and spread out that way non-sexual, so
12 there's vertical transmission and horizontal.

13 Horizontal just means going sideways. Once it
14 goes, it has to get into the germ cells to then
15 propagate, and that was the contention with their
16 experts, that that would take a long time, evolutionary
17 scale, which I found not to be true.

18 BY MR. VANDEVEER:

19 Q I'm sorry. You said -- repeat the last part.
20 You found it not to be true?

21 A I asked them what evolutionary scale meant and
22 they just rolled their eyes and said, "You know, long
23 time." My public -- articles and publications --

24 MS. STEED: Objection. Hearsay and also goes
25 beyond --

1 JUDGE TONAKI: Sustained.

2 BY MR. VANDEVEER:

3 Q Can you explain non-sexual horizontal
4 transmission of Wolbachia bacteria?

5 A The best explanation I can give is a human
6 analogy which is -- okay? So there's the diseases that
7 when a couple have sex, it might go to the baby --
8 that's vertical -- or it might go to the partner,
9 regardless of what happens to the baby. So in the act
10 of sex, it could go horizontally or to the baby or both.

11 Now, in the world of Wolbachia, there are
12 exhibits that say that it could go both, either way.

13 Q And did you base this opinion on any peer
14 reviewed articles?

15 A Yes, there was a peer reviewed article and
16 there's cross reference as one of your exhibits. I
17 think it's the one by Ahmad, Exhibit 1, 2, 3, 4 -- 14.
18 He gives a cross reference where they say that in
19 aphids, it may occur going horizontally in sex as well
20 as vertically. The issue has always been. Once it goes
21 horizontally into your general body cells, how quickly
22 does it pass to your germ cells to start the cycle?

23 Q So that goes to my next question, Dr. Pang.
24 If it gets in female mosquitoes, what are the risks
25 you're concerned about?

1 A My risk is that it will go quickly to the germ
2 cells and start to propagate, and then we'll have a
3 sweep of that Wolbachia into our mosquitoes.

4 Q Can you describe what sweep means?

5 A Sweep means that the Wolbachia takes over all
6 your mosquitoes, a high percentage. Now, it might be a
7 lower number but it's a high percentage, so it dominates
8 your mosquitoes.

9 That's what they use for dengue control. You
10 want them to get Wolbachia because then they won't --
11 the mosquitoes won't get dengue so badly.

12 Q And why is it bad in the scenario you
13 described? Why would this sweep be bad, in your
14 opinion?

15 A I think -- there's from both sides. I think
16 I'd agree on this --

17 MS. STEED: Objection. Calls for improper
18 expert opinion.

19 JUDGE TONAKI: Overruled.

20 THE WITNESS: I think we agree with this
21 because there was discussion amongst your own side when
22 I went to -- you invited me to the counsel of experts.

23 BY MR. VANDEVEER:

24 Q Sorry, Dr. Pang, if you can just address my
25 question --

1 they mention it, but they did not want to talk further.

2 BY MR. VANDEVEER:

3 Q So in your opinion, it did not appear as an
4 in-depth study?

5 A Correct.

6 Q It didn't address the concern?

7 A Right.

8 (inaudible whispering)

9 Q Can you explain, based on your scientific
10 knowledge, about the increase of horizontal transmission
11 when vertical transmission is suppressed?

12 A Yes. That was again one of your -- what do
13 you call that? -- exhibits. I believe it's the
14 Singapore consortium.

15 They did a field study and they saw -- they
16 saw female mosquitoes with Wolbachia. They were doing
17 an IIT project, just like you plan to do Upcountry for
18 the birds. They're trying to suppress all the
19 mosquitoes. And there was not supposed to be infected
20 females with Wolbachia, let alone larva that they were
21 transmitting, but they saw that.

22 They didn't call it horizontal transmission.
23 They said maybe it's the lab. There was a lab error,
24 okay? And it's kind of worrisome, but then it went
25 away, and they said, "We think it went away because wild

1 mosquitoes came into the area and out-competed them."

2 And they were very worried that if you ever
3 pulled off IIT and controlled all the wild mosquitoes,
4 and this horizontal -- they thought it was lab
5 release -- got out of control, that you'd have no
6 control over those mosquitoes.

7 So they added to it irradiated -- all the
8 mosquitoes so that if the wild mosquitoes were really
9 controlled, like IID promised, you still wouldn't have
10 this population expand because you added radiation to
11 it.

12 They also said that if that got out of
13 control, they'll bring in another Wolbachia to shut down
14 that Wolbachia. This was the Singapore consortium,
15 Exhibit -- the last Exhibit, 14.

16 MR. VANDEVEER: Your Honor, I'd like to
17 introduce that exhibit for the Plaintiffs' recollection,
18 if that's okay. I actually believe it's one of
19 Defendants' exhibits. Just a moment.

20 MS. STEED: Your Honor, we'd like to clarify
21 whether's he's introducing it into evidence or showing
22 it to the witness?

23 MR. VANDEVEER: I'm showing it to the witness,
24 your Honor.

25 THE WITNESS: Sorry. I didn't catch that.

1 (Audio from 11:03 to 11:08 not transcribed)

2 BY MR. VANDEVEER:

3 Q -- considered a reliable source?

4 A Yeah, and we had no negative comments so far
5 on it.

6 Q When you say so far, when was this published?

7 A About three weeks ago.

8 Q So does this -- this paper that you published
9 three weeks ago as the senior author, does it inform
10 your opinion regarding math modeling regarding the
11 efficacy of the Maui plan?

12 A I heard it. Say it one more time. I'm not
13 sure what part you're emphasizing.

14 Q Does this paper --

15 MS. STEED: Objection.

16 MR. VANDEVEER: Sorry.

17 MS. STEED: Objection. Leading.

18 JUDGE TONAKI: Overruled.

19 BY MR. VANDEVEER:

20 Q Does this paper inform your opinion about the
21 math modeling for the Maui plan?

22 A Yes.

23 Q In what way?

24 A Because this model shows the increase rise as
25 if you first introduced CI, you expect to see something,

1 and then it shows the limitation when you plateau
2 because all the other impinging factors control your
3 release of CI and the mosquito, so it's a nice dynamic,
4 the initial rise and the final plateau. And we
5 specifically say you can divide the equation up into
6 these two sections.

7 Furthermore, this thing handled a pilot study
8 already done up in Kula where we saw a great
9 effectiveness and explain it, and it went on to say that
10 people complained about these slugs and it can handle
11 those problems in the field as well. The matter will be
12 self-correcting.

13 Q So Dr. Pang, if you would, can you explain why
14 this math modeling is important?

15 A If you can verify it against previous studies
16 and you think it's pretty good, then you can predict
17 pretty -- well, I hope we can predict pretty well what
18 could happen in the future.

19 What could happen in the future is what you
20 saw in the Singapore model, that things kind of break
21 down and they had to bring more mosquitoes and, you
22 know, what's the problem there? Is it drift in? I
23 don't know, but without a model, you're kind of like --
24 you got no guidance at least to direct you.

25 So math models can be very bad if you don't

1 A Not that I'm aware of. They showed the
2 results.

3 Q And why is that problematic?

4 A Because I didn't know what went into the
5 formula, specifically horizontal transfer. The other
6 drifting into the population, drift -- wild drift
7 running were a containment area and not choke points.

8 Q In your opinion, is additional study needed?

9 A Yes.

10 Q Can you describe what biopesticide wind drift
11 is?

12 A Biopesticide wind drift. I mean I've heard
13 that term. I assume you mean the Wolbachia mosquito
14 drifting out of the area --

15 MS. STEED: Objection.

16 THE WITNESS: -- to be --

17 MS. STEED: The witness is guessing.

18 JUDGE TONAKI: Sustained.

19 BY MR. VANDEVEER:

20 Q Dr. Pang, do you have any concerns about
21 mosquitoes drifting out of subject area for this study
22 on Maui -- I'm sorry, for the project on Maui?

23 A Drifting out? First of all, if they drift,
24 the area's in the mid range. If they drift higher, to
25 the higher elevations, I think the mosquitoes will die.

1 If they drift out to the lower elevations, then you've
2 introduced your IIT project to the lower elevations.

3 Okay. But what else is drifting? Do you
4 think there's horizontal transfer or not? If you're
5 drifting horizontal transfer male and female Wolbachia,
6 you're going to sweep the lowlands, so now you've got
7 things drifting in or out.

8 Out means, to me, like could be uphill where
9 it's cold and they all die or out means in the lowlands
10 where they all thrive. That's drifting out. Don't
11 forget they're drifting in.

12 Q And why is that problematic, in your opinion?

13 A Which one, drifting in or out, or up or down?

14 Q Sorry. We'll start with drifting in. Why is
15 that problematic?

16 A Drifting in, I don't think above the colder
17 elevations there's anything to drift in. They're all
18 dead or they're not there yet. But drifting in from the
19 lowlands, you're essentially bringing in more wild type
20 and now you have to maintain higher proportions of
21 your -- your external release because you're diluting
22 out your effect. This is what the Singapore consortium
23 saw, that it was drifting in. We've gotta step it up,
24 guys, okay? So that's drifting in, diluting out the
25 effect. You also -- both female and female mosquito --

1 Q (inaudible) efficacy --

2 A Yeah, yeah.

3 Q How about drifting out?

4 A Drifting out. If you drift up to the
5 highlands, I'm not too worried, it's cold, they'll all
6 die. They'll probably die before they come back down.
7 But drifting out to the lowlands, essentially you
8 release your IIT area into new grounds, and if there's
9 horizontal transfer, you're risking a sweep. This is
10 what the Singapore guys saw also.

11 They couldn't control it in their target sites
12 so they set up these big buffer zones so things wouldn't
13 drift in and hopefully not drift out. And you see them
14 repeatedly redraw the zones. Then talk about core zones
15 protected, but the peripheral zones wasn't.

16 These zones are kind of vague as things drift
17 back and forth. Not to the highlands. There's nothing
18 coming down and anything going up, too cold and just let
19 them die.

20 Q And the concern about drift out is a concern
21 about potential impact to the environment; is that
22 correct?

23 A Yes.

24 MS. STEED: Objection. Leading.

25 JUDGE TONAKI: Overruled.

1 THE WITNESS: There are two kinds of things
2 that might drift out, your own release, okay, but --

3 MS. STEED: Objection.

4 THE WITNESS: -- horizontal transfer --

5 MS. STEED: There is no question that was
6 asked.

7 MR. VANDEVEER: I believe it's the same
8 question, your Honor.

9 JUDGE TONAKI: Sustained.

10 BY MR. VANDEVEER:

11 Q Okay. So why is this important, Dr. Pang?

12 A Because this whole thing was supposed to be
13 contained in an area, but if you can't contain it and
14 things drift out that you worry about, then show me the
15 fallback position, how we're going to contain it once it
16 gets out of hand.

17 Q And did you see a fallback position in the
18 final environment assessment?

19 A I really didn't, except that they would stop
20 releasing the experimental males. Things drifted out
21 already.

22 Q So in your opinion, did that sufficiently
23 address the concern regarding mitigation?

24 A It could address the concerns if you showed me
25 the math model -- math model, but if you don't see me

1 the math model, I'm going to assume they would drift off
2 and expand. The math model is essential. It can vary
3 for all kinds of speeds of vectors, all kind of blocks
4 from slugs to mosquitoes to flies. It's a little bit
5 strange to me people disparage it without actually doing
6 one or seeing one.

7 Q Can you define super infection as it relates
8 to this project?

9 A Yeah, I think -- to me, I didn't focus on that
10 but I think a target can get multiple Wolbachiaes at
11 once. At once. It can carry two at once.

12 Q And is that --

13 MS. STEED: Move to strike. The witness just
14 admitted he didn't examine that.

15 JUDGE TONAKI: Overruled. Continue if you had
16 more in your answer.

17 THE WITNESS: And I think one of the
18 references I saw was this -- I think it was one of the
19 references to in item number 9, 10, 11, 12, they talk
20 about aphids getting things horizontally -- horizontal
21 transfer, but they said, "Oh, but look, you could get it
22 vertically too." So two kinds of Wolbachia, one
23 vertically through the, you know -- to vertically and
24 the other horizontally, so that's kind of strange. It's
25 carrying two kinds of Wolbachia. I didn't pay that much

1 anyone contact you, I should say, based only that?

2 A No. Actually, my colleagues talked me out of
3 it, but I thought it was a good idea and I just sent
4 them a rebuttal to say, "We don't have to be so
5 invasive. There's a good alternative." And the
6 malaria -- human malaria people consider it now.

7 Q Can you explain what you mean by that?

8 A The alternative or the -- the alternative?

9 Q The alternative, yes.

10 A We're going to have to resort to human
11 malaria. Human malaria goes between man mosquito, man
12 mosquito, man mosquito, okay? The mosquito just wants a
13 blood meal so if the mosquito bites a cow, well, the
14 cows don't get malaria. What the mosquito gave to the
15 cow won't propagate. Cows don't get human malaria and
16 it couldn't have gotten malaria from the cow, so it
17 dilutes it out.

18 So the Africans discovered this anecdotally
19 when they have fever where malaria is endemic. They
20 drive their cattle under their house. The mosquito bite
21 the cattle and their human malaria goes away. You
22 diluted out of the cycle, okay? Good. So that was
23 called zoono-phylaxis and later described by the
24 British, so you can dilute it out.

25 Add to that now -- to the cattle, you could

1 add a malaria drug, Primaquine, which is exquisitely
2 good at killing all stages of the mosquito. So the
3 mosquito gets malaria. It takes -- I don't know --
4 eight to ten days to develop. It will kill all the
5 stages. So not only does the mosquito dilute it out by
6 biting the cattle and not getting human malaria from the
7 cattle, but if you dose your cattle with Primaquine,
8 you've cured all mosquitoes that bit it? Okay.

9 So they said, "Ah, you know, what if the
10 cattle die of Primaquine?" Primaquine is quite safe. I
11 offered to buy the cattle and call it Pang's cattle and
12 dose it with Primaquine. That fell out of favor because
13 of the big push not scientifically because, "We're going
14 to invent a vaccine, Dr. Pang." And now that the
15 vaccine is --

16 MS. STEED: Objection. Hearsay.

17 JUDGE TONAKI: Overruled.

18 THE WITNESS: Now that the vaccine's not here,
19 this has resurfaced again. In theory, you could not go
20 after the mosquito, but go after its malaria if every
21 time it took a blood meal, it bit an animal that had
22 Primaquine. People told me, "Don't take these animals
23 up there's. It's already endangered." Fine. How about
24 the portable blood meal thing that this -- not taking
25 animals, but blood packets and then feeds.

1 Or you can move your animals far from the site
2 because of the ranging distance for a blood meal can be
3 very long for the female mosquito. I think in the
4 Galapagos, it's approaching four miles for one bite of a
5 mosquito, culex, and for the other type of mosquito,
6 16 miles. So you can put your animals way out of the
7 zone and they feed, cure malaria and go back, and plenty
8 mosquitoes, you're giving them blood, but no malaria.

9 BY MR. VANDEVEER:

10 Q Is the IIT method that's used globally that's
11 generally, I believe, referred to as the sweep method --

12 A No, no, it's the other way around, but go
13 ahead.

14 Q Is the IIT method that's used globally
15 different than the Maui project in any way?

16 A No, the IIT method is the -- is the sterility
17 method. The IIT method is not called the sweep method.
18 Sweep is the whole thing takes Wolbachia so you release
19 male, female. The IIT is you wiping out all the
20 mosquitoes, period.

21 Q And what is that method known as?

22 A The first or second one?

23 Q The second.

24 A That's called the IIT and it's also called --
25 I used to call it cytoplasmic incompatibility, CI.

1 how much more capable they may be of spreading diseases,
2 including those two specific ones, but others that these
3 culex quinquefasciatus mosquitoes transmit to humans
4 and birds and other wildlife.

5 Q Did you testify about wind drift?

6 A Yes.

7 Q And what about wind drift concerned you?

8 A You know, I'm more concerned that no studies
9 have been done and that this -- because this is a
10 biopesticide, which is essentially a microbial
11 pesticide, there's the same issue as there is with
12 pesticides -- is that it can drift on the wind to
13 unintended places, so how that might affect the
14 environment and human health and, you know, just the
15 health of life on the island as a whole.

16 I also had come to understand that there are
17 issues with, you know, the efficacy of the wind drift
18 affecting the (inaudible) as well, but my concern
19 actually was more about these mosquitoes are going to go
20 places they weren't supposed to go, so that's not really
21 a controlled, contained situation.

22 Q When you say it wasn't studied, are you
23 referencing in the environmental assessment for this
24 project?

25 A It was not mentioned at all in the

1 environmental assessment.

2 Q From what you learned about the -- well, let
3 me back up.

4 Have you read the draft environmental
5 assessment for this project?

6 A Yes.

7 Q Have you read the final environmental
8 assessment for this project?

9 A Yes.

10 Q And from what you learned about the project,
11 are you concerned about any potential negative impacts?

12 A I'm very concerned about those impacts and
13 several others that were mentioned in my testimonies and
14 comments, and that were not addressed in those
15 environmental assessments, the draft or the final -- or
16 were not adequately addressed. Some of them were not
17 addressed at all, several of them.

18 Q Can you recall what the ones that weren't
19 addressed at all were?

20 A I have to think about that. I -- my comment
21 on the draft environmental assessment is eight pages
22 long and there are so many things in there -- yeah, I
23 think specifically some of the studies that were
24 referenced. I think the --

25 There's an issue about the female mosquitoes

1 MR. FRANKEL: Okay.

2 MS. STEED: -- yeah.

3 MR. VANDEVEER: And she has a copy of the --
4 you're talking about 1?

5 MS. STEED: Yeah. Yeah, Exhibit 1. I just
6 want to pull it up for everyone in the gallery.

7 (inaudible whispering)

8

9 CROSS-EXAMINATION

10 BY MS. STEED:

11 Q Okay. Ms. Lia, do you still have Plaintiffs'
12 Exhibit 1 in front of you?

13 A Yes.

14 Q Okay.

15 A Yeah.

16 Q I am on PDF page 260 where it begins with the
17 concerns.

18 Do you see where I'm at?

19 A Yeah.

20 Q Okay.

21 A Yes.

22 Q Okay. And I'm looking at concern number 1.

23 Do you agree that concern number 1 was about
24 whether or not an environmental impact statement should
25 have been prepared?

1 concern in --

2 A That is the topic, yes.

3 Q Okay. Now, Ms. Lia, previously in your
4 testimony, is it correct that you testified that you
5 recreate in the Makawao Forest Reserve area; is that
6 correct?

7 A Yes.

8 Q Now, when you're recreating in the Makawao
9 Forest area, have you ever seen honeycreepers?

10 A I think I have in the past. I'm not a bird
11 expert so I don't know that I would know specifically if
12 it was a honeycreeper or some type of finch maybe, but I
13 think I likely have.

14 Q Do you -- so you wouldn't know the identity
15 though?

16 A At this point, I might. I might. But, you
17 know, in the past, I can't say I would have known
18 specifically if it was a honeycreeper.

19 Q Do you have a favorite honeycreeper?

20 A I'm going to say the i'iwi is the one that
21 I -- actually I do think I have seen the i'iwi in
22 Hosmer's Grove previously, so that probably would be a
23 favorite, based on the fact that that's one I'm familiar
24 with.

25 Q And why is the i'iwi your favorite

1 REDIRECT EXAMINATION

2 BY MR. VANDEVEER:

3 Q Ms. Lia, earlier when Attorney Steed was
4 talking about Exhibit Number 1, the final environmental
5 assessment, whereas you would agree that the comments
6 were topics that were identified by Attorney Steed, do
7 you mean to agree that you felt the concerns raised were
8 clearly addressed?

9 A Could you repeat that? Attorney -- what are
10 we --

11 Q You agreed that the comments that she took you
12 through were topics that were identified.

13 Did you mean to agree that you also felt that
14 the concerns that were raised were clearly addressed?

15 A No. I was just confirming that those appeared
16 to be the topics that were discussed in the Appendix H
17 under those numbers.

18 Q And when you submitted comments on the draft
19 environmental assessment, did you expect those comments
20 to be addressed in the final environmental assessment,
21 or did you expect a state attorney to sift through them
22 with you later?

23 A I had hoped that they would be addressed in
24 the final environmental assessment.

25 MR. VANDEVEER: Thank you, your Honor. No

REPORTER'S CERTIFICATE


I, MaryAnne Young, CSR No. 369, Certified Shorthand Reporter, certify:

That the foregoing is a true and correct transcript of my shorthand notes so taken.

I further certify that I am not a relative or employee of any attorney of the parties, nor financially interested in the action.

I declare under penalty of perjury under the laws of Hawaii that the foregoing is true and correct.

Dated this 13th day of April, 2023.



MARY ANNE YOUNG, CSR No. 369

Mosquito Release Helicopter Flight Tracking

Image	Date	Tail	Location	Depart	Arrive	Flight Time	Electronically Filed
01_2023_1109	9-Nov-23	N811WA	Waikamoi	3:13pm	4:23pm	1 h 10 m	FIRST CIRCUIT
https://www.flightaware.com/live/flight/N811WA/history/20231110/0113Z							1CCV-23-0000594
02_2023_1115	15-Nov-23	N811WA	Waikamoi	12:06pm	1:27pm	1 h 21 m	09-JAN-2024
https://www.flightaware.com/live/flight/N811WA/history/20231115/2206Z							10:18 PM
03_2023_1115	15-Nov-23	N811WA	Kipahulu	2:24pm	3:34pm	1 h 19 m	Dkt. 205 EXH
https://www.flightaware.com/live/flight/N811WA/history/20231116/0024Z							
04_2023_1116	16-Nov-23	N809WA	Kipahulu	3:22pm	4:58pm	1 h 36 m	
https://www.flightaware.com/live/flight/N809WA/history/20231117/0148Z/PHOG/PHOG							
05_2023_1117	17-Nov-23	N114HD	Waikamoi	11:21am	12:22pm	1 h 1 m	
https://www.flightaware.com/live/flight/N114HD/history/20231117/2121Z							
06_2023_1128	28-Nov-23	N114HD	Waikamoi	7:08am	7:47am	38 m	
https://www.flightaware.com/live/flight/N114HD/history/20231128/1708Z							
07_2023_1201	1-Dec-23	N809WA	Waikamoi	12:34am	1:09pm	34 m	
https://www.flightaware.com/live/flight/N809WA/history/20231201/2301Z/PHOG/L%2020.81667%20-156.18333							
08_2023_1201	1-Dec-23	N809WA	Waikamoi	2:33pm	3:23pm	49 m	
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09_2023_1206	6-Dec-23	N809WA	Waikamoi	1:59pm	3:05pm	1 h 6 m	
https://www.flightaware.com/live/flight/N809WA/history/20231207/0028Z/PHOG/PHOG							
10_2023_1207	7-Dec-23	N809WA	Kipahulu	2:35pm	3:55pm	1 h 19 m	
https://www.flightaware.com/live/flight/N809WA/history/20231208/0035Z/PHOG/PHOG							
11_2023_1212	12-Dec-23	N114HD	Kipahulu	8:48am	10:19am	1 h 30 m	
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https://www.flightaware.com/live/flight/N114HD/history/20231213/2345Z							
13_2023_1221	21-Dec-23	N114HD	Kipahulu	11:15am	12:42pm	1 h 27 m	
https://www.flightaware.com/live/flight/N114HD/history/20231221/2115Z							
14_2023_1222	22-Dec-23	N114HD	Kipahulu	10:05am	11:17am	1 h 11 m	
https://www.flightaware.com/live/flight/N114HD/history/20231222/2005Z							
15_2024_0103	3-Jan-24	N690WA	Both	8:44am	10:53am	2 h 9 m	
https://www.flightaware.com/live/flight/N690WA/history/20240103/1844Z							
16_2024_0104	4-Jan-24	N114HD	Waikamoi	8:26am	8:48am	32 m	
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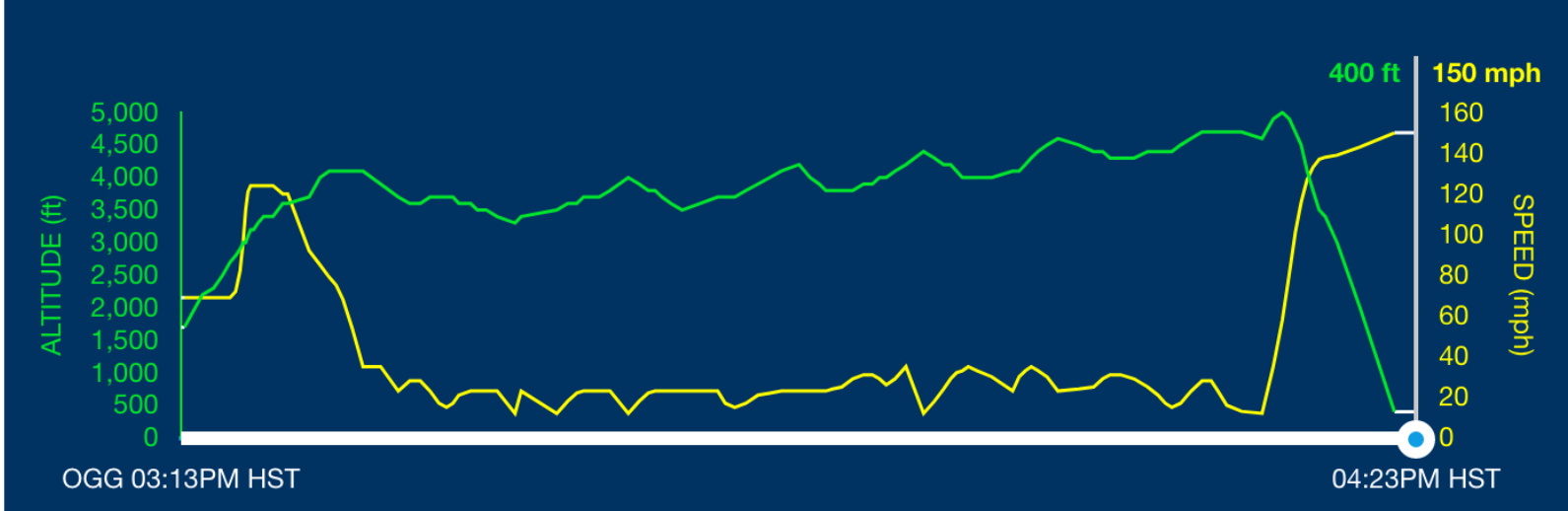
EXHIBIT B



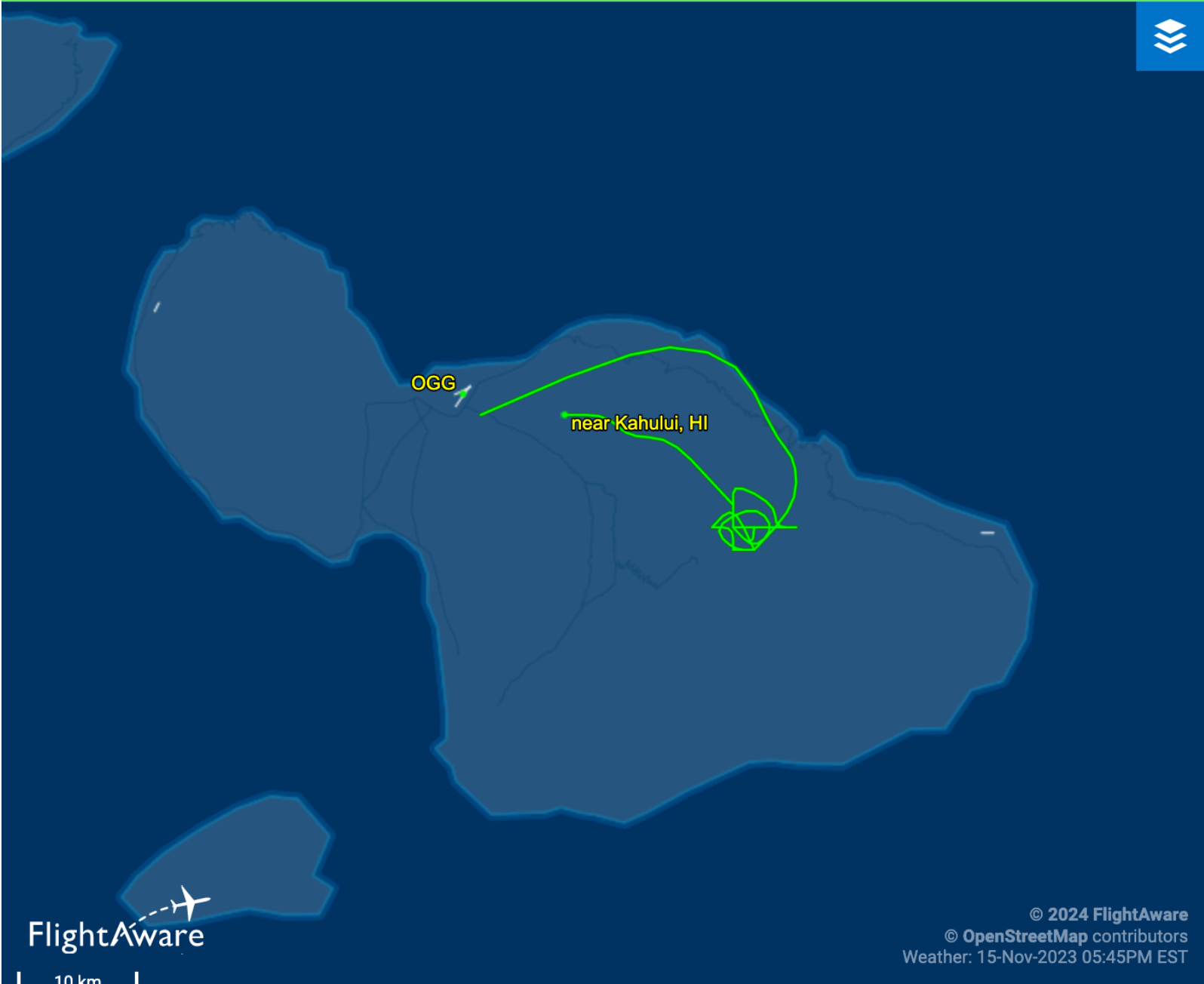
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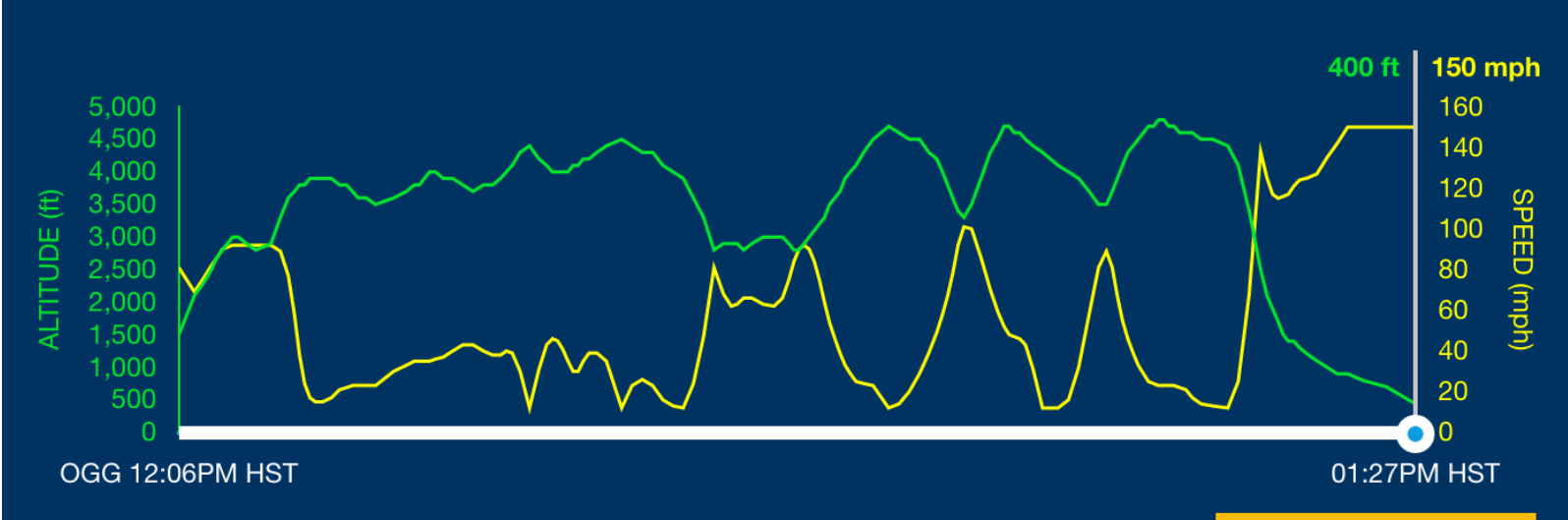
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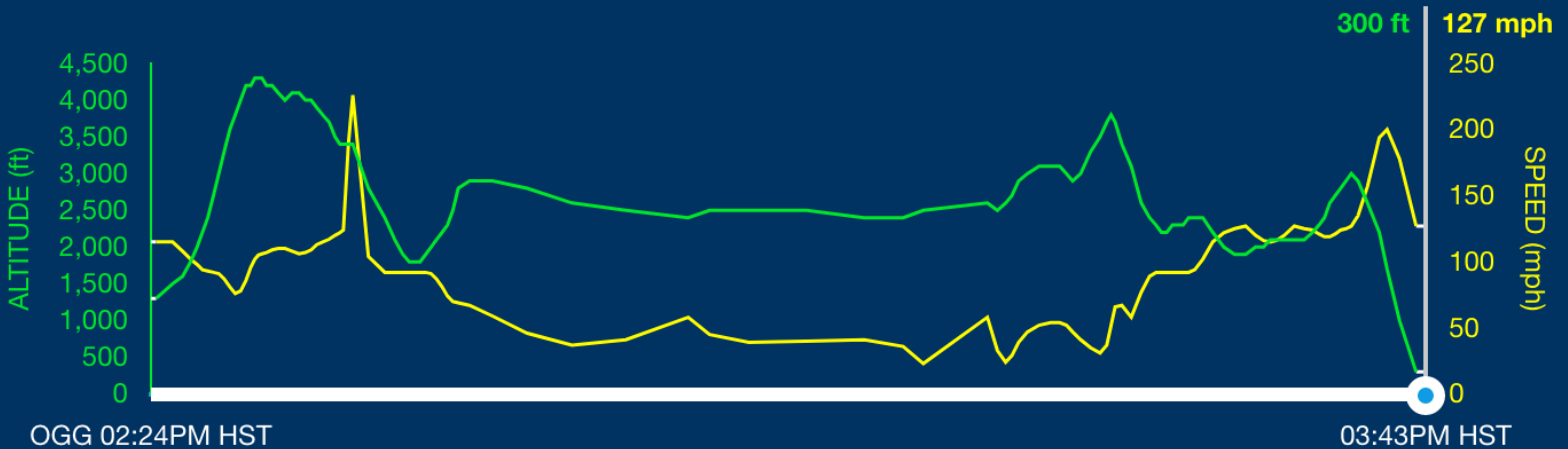
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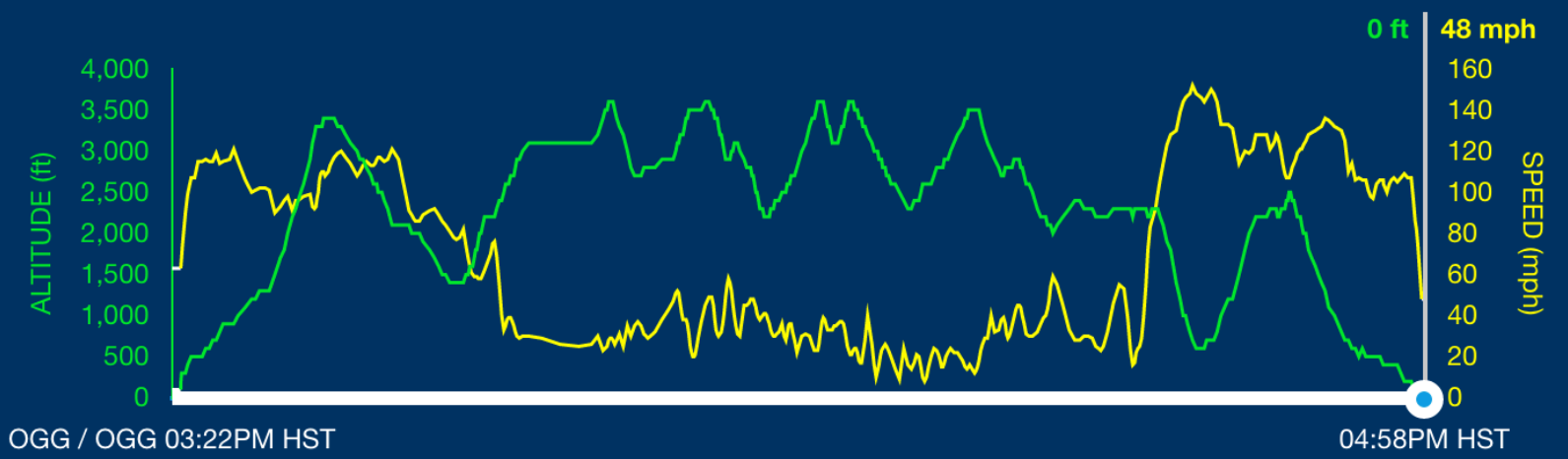
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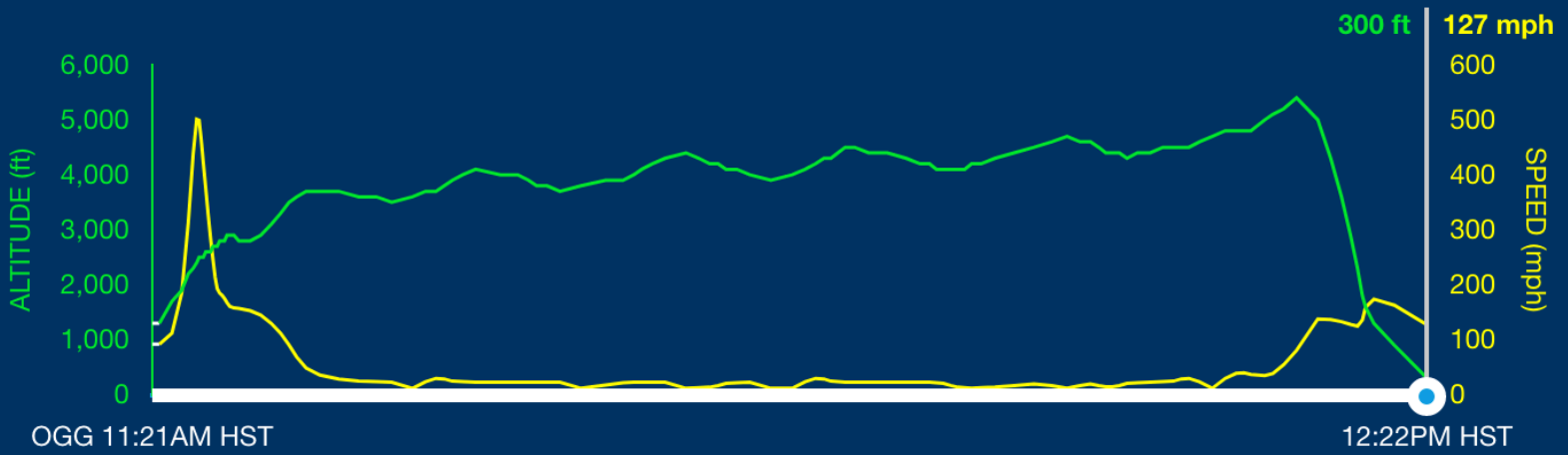
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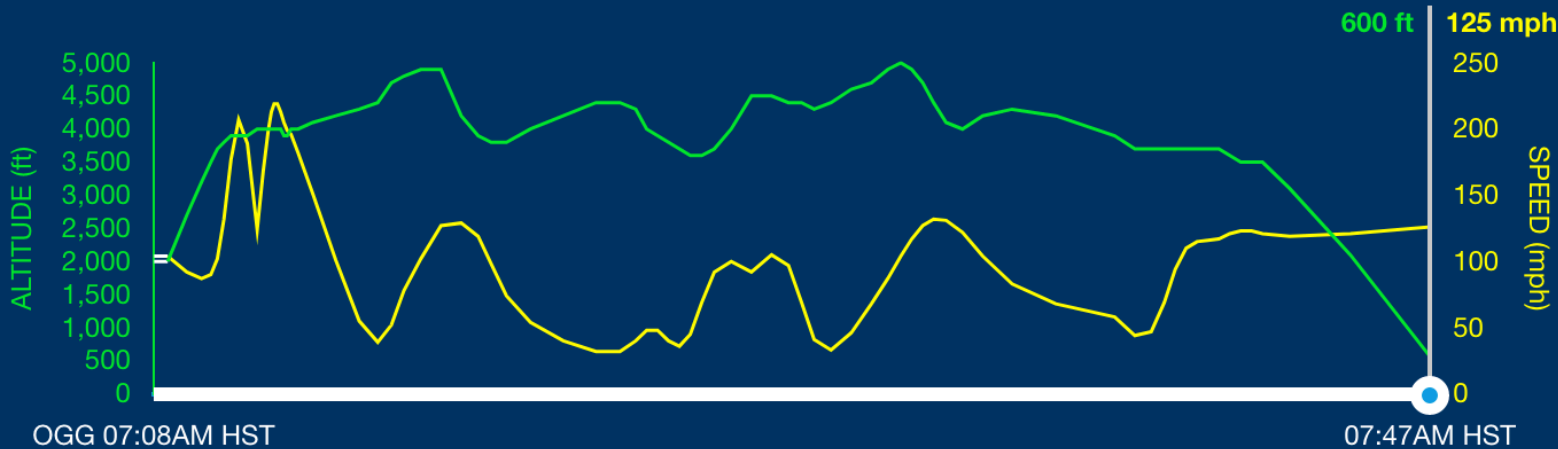
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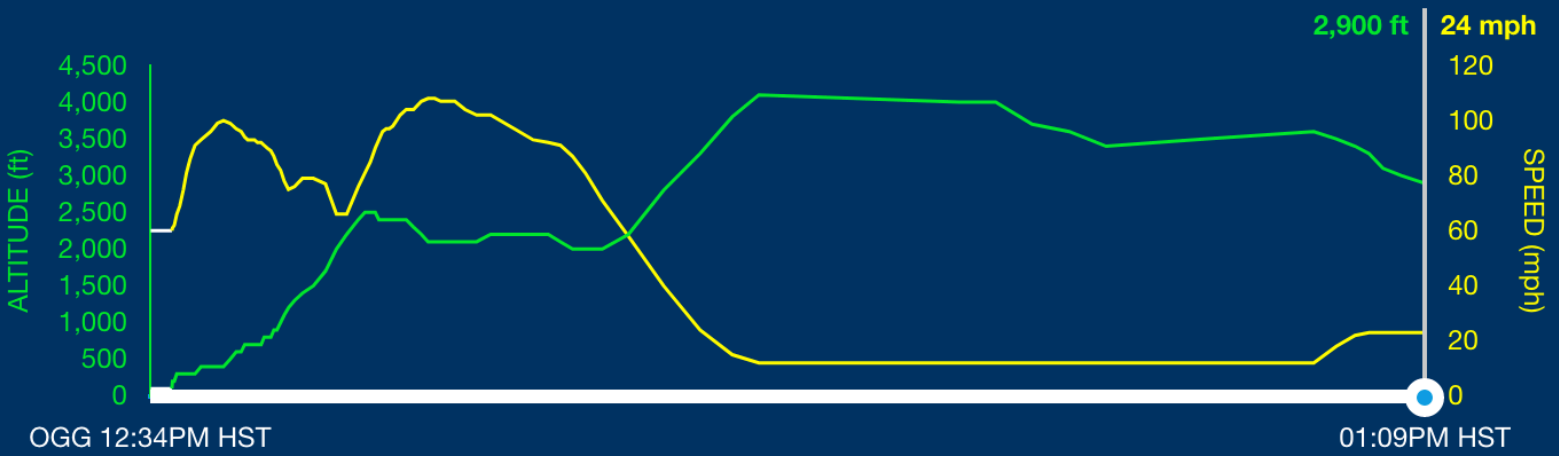
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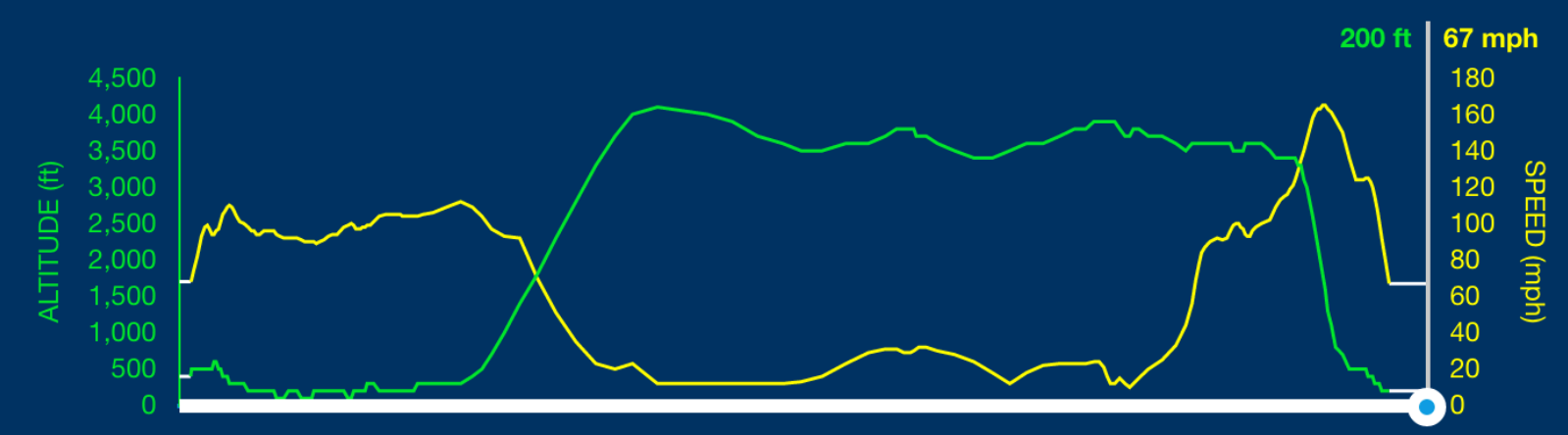
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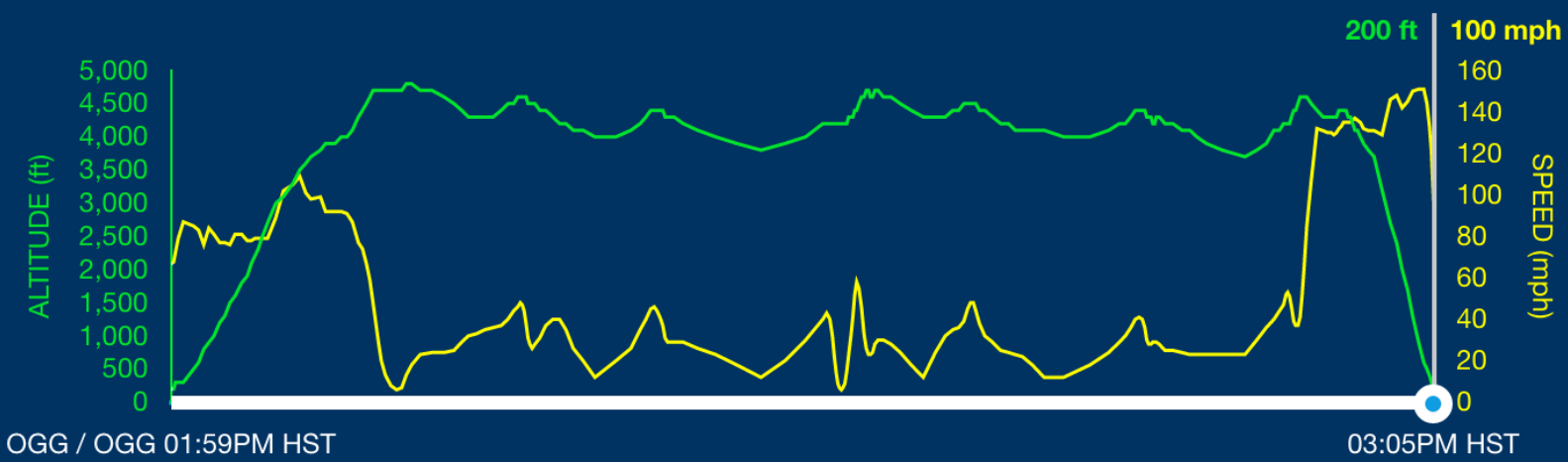
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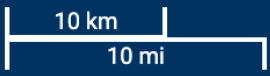
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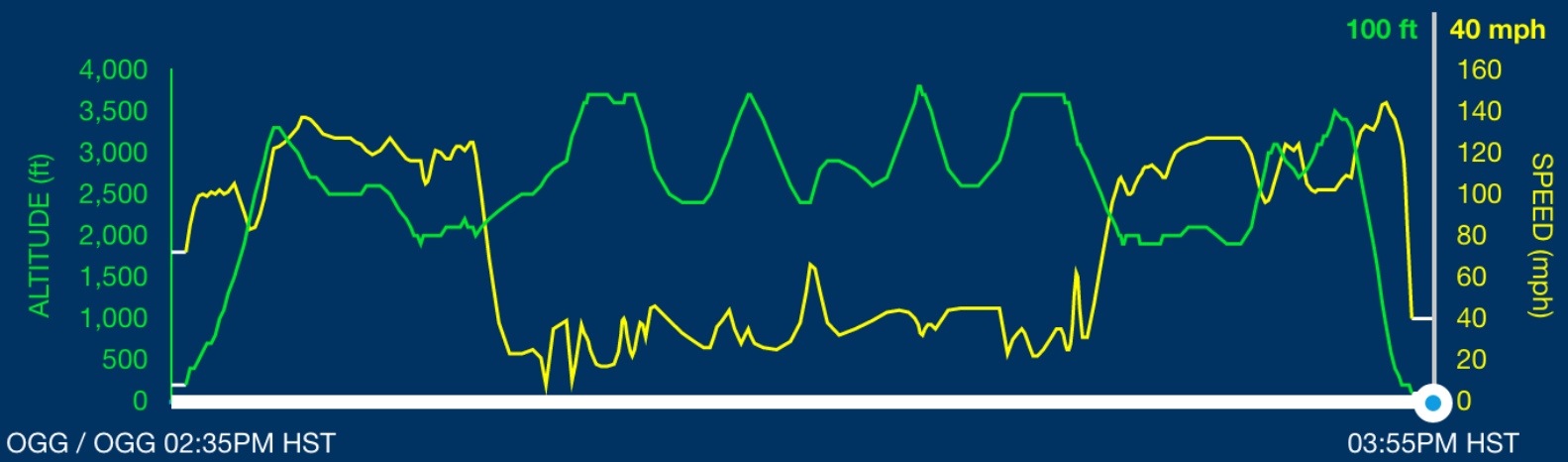
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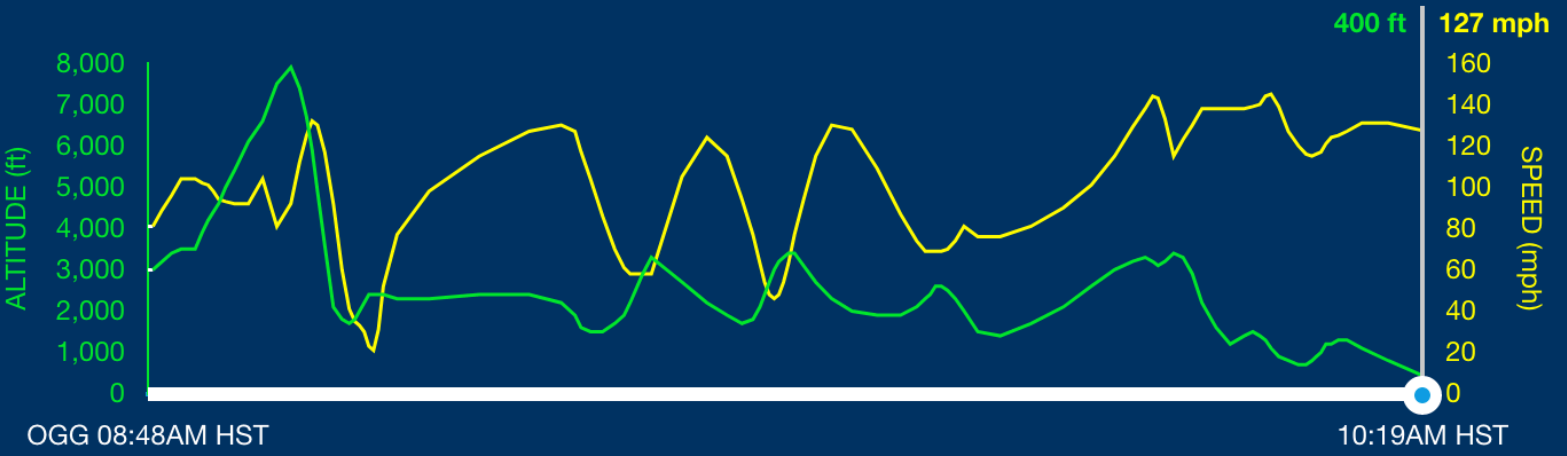
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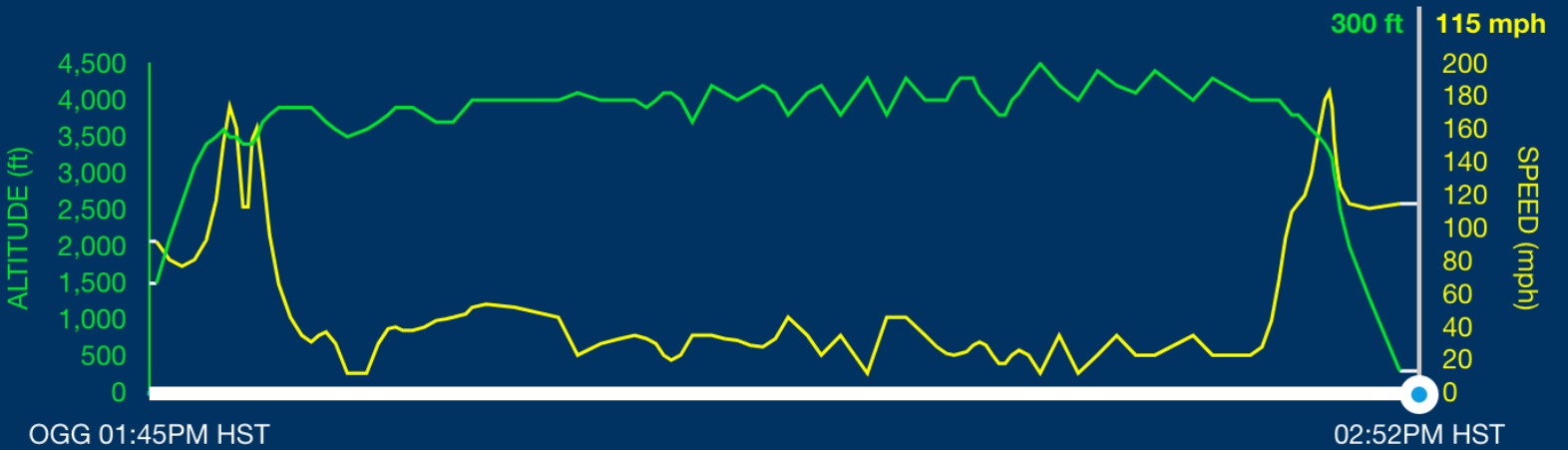
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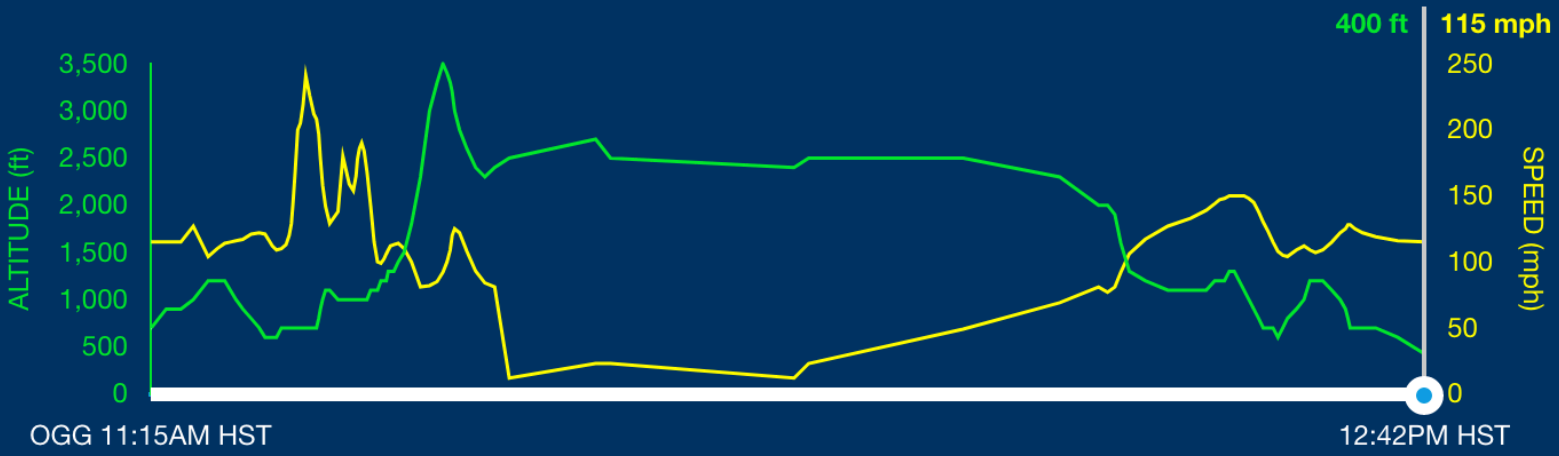
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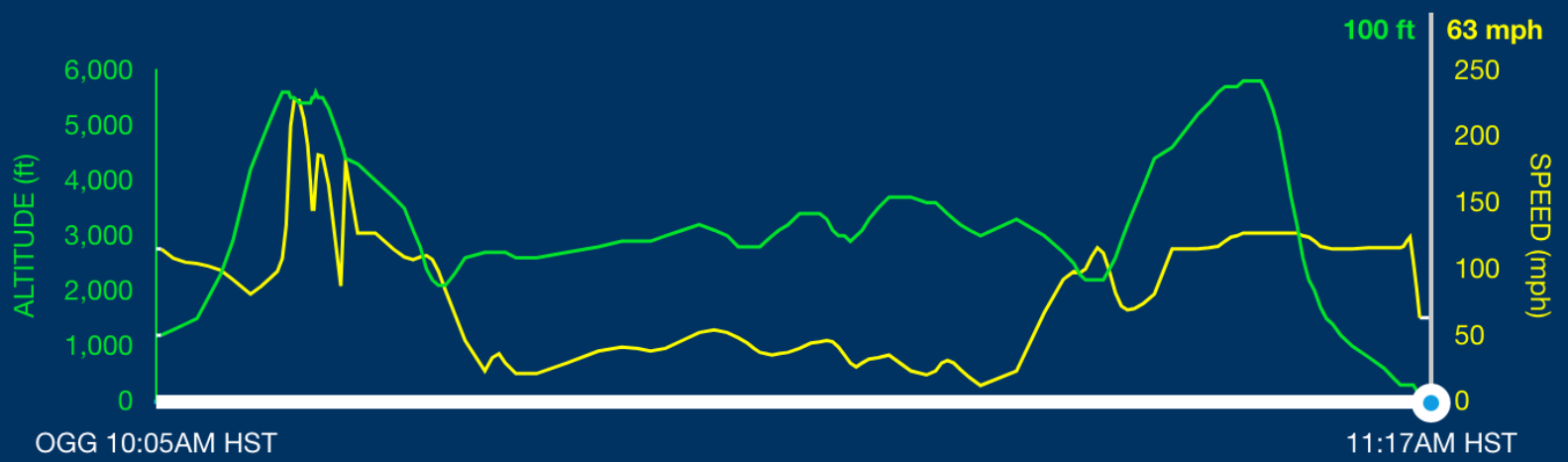
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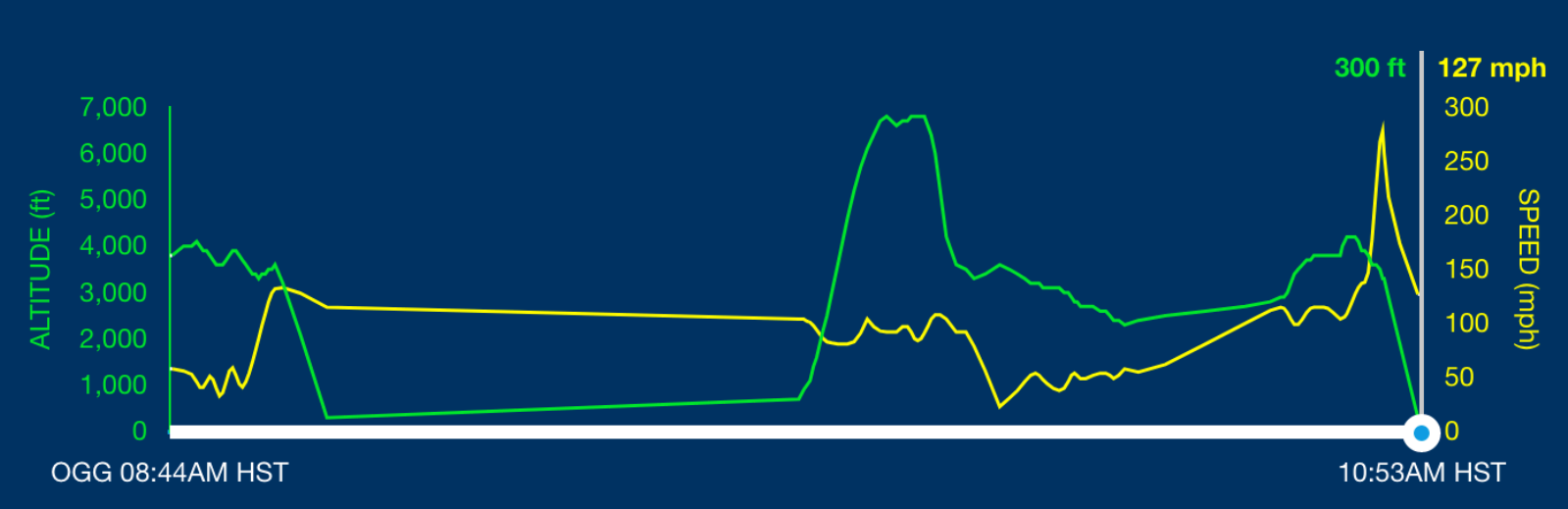
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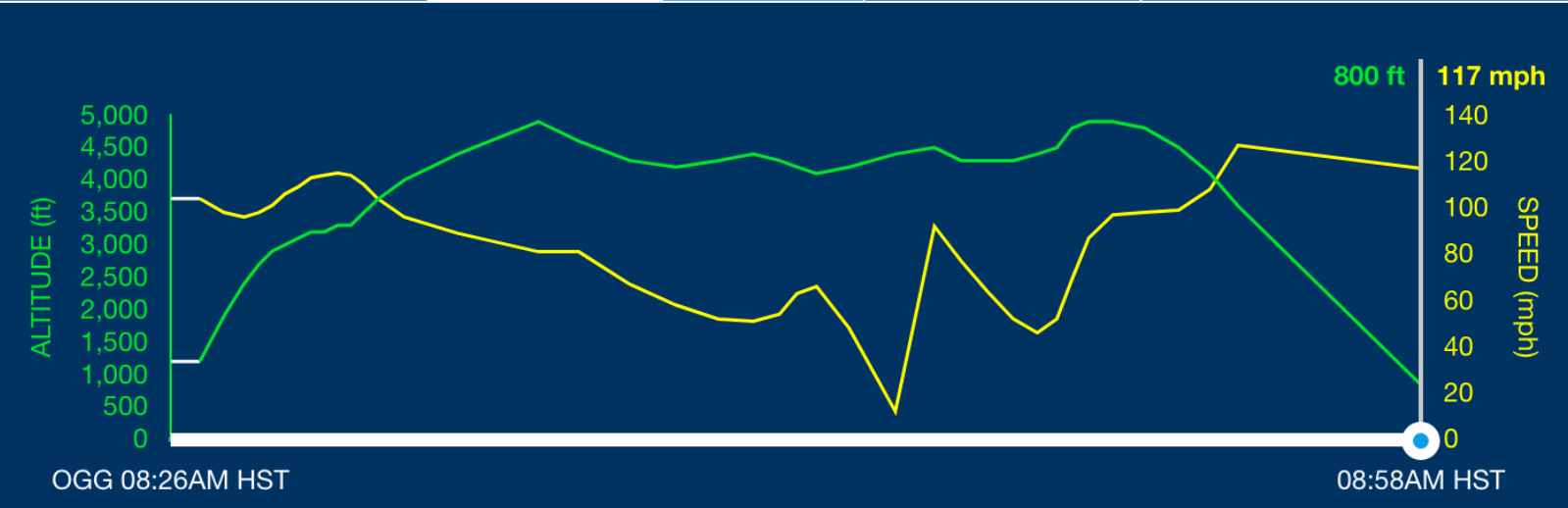
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IN THE CIRCUIT COURT OF THE FIRST CIRCUIT

STATE OF HAWAI'I

HAWAI'I UNITES, a 501(c)(3) nonprofit
corporation; and 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,

and

AMERICAN BIRD CONSERVANCY,

Defendant-Intervenor.

Civil No. 1CCV-23-0000594 (JMT)
(Environmental Court)

CERTIFICATE OF SERVICE *for*

**PLAINTIFFS' MEMORANDUM IN
OPPOSITION TO DEFENDANTS
BOARD OF LAND AND NATURAL
RESOURCES, STATE OF HAWAI'I,
and DEPARTMENT OF LAND AND
NATURAL RESOURCES, STATE OF
HAWAI'I'S MOTION FOR
SUMMARY JUDGMENT;
DECLARATION OF COUNSEL;
DECLARATION OF TINA LIA;
EXHIBITS A-B**

Judge: Hon. John M. Tonaki
Hearing Date: January 17, 2024
Hearing Time: 9:00 a.m.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on the date indicated below, a copy of the above-named document along with this Certificate of Service were duly served upon the following parties via efilings/JEFS:

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DATED: Honolulu, Hawai‘i, January 9, 2024.

/s/ Timothy Vandever
Margaret (Dunham) Wille
Timothy Vandever

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Hawai'i Unites and Tina Lia