

----- Forwarded Message -----

Subject: PhyloChip Report

Date: Tue, 25 Jun 2019 17:23:56 -1000

From: Bridget Hammerquist <bridgethammerquist@hawaiiantel.net>

To: Bill Buley <bbuley@thegardenisland.com>, Jessica Else <jelse@thegardenisland.com>

Aloha Bill and Jessica,

Attached please find a guest commentary/letter to the editor that I hope you will share with the public in response to the recent press release from Department of Health that they could "assure the public that recreational waters in Waiopili Stream and nearby beaches do not pose an imminent health threat to swimmers."

As evident from the email chain below, obtained through a FOIA, the initial DOH reaction to the PhyloChip Study was contrary to their press release. The Study came about after the EPA was critical of the DOH Waiopili Ditch Sanitary Survey Part 1. See the EPA letter attached. The EPA found that more study was needed and expressed concern that the DOH conclusions in their initial Sanitary Survey were not appropriately supported or were contradicted by their own data.

"EPA also urges Hawai'i DOH to continue its investigation of the source of the bacteria. We have reviewed the Sanitary Survey conducted by Hawai'i DOH and have significant concerns with its conclusions and Hawai'i DOH's reliance on the survey to make decisions about posting signs at coastal recreation waters. EPA is also concerned that many of the conclusions drawn from the Sanitary Survey are not appropriately supported or contradict existing data." (emphasis added)

It's hard to believe, but they had the conclusion of the study "softened" and changed altogether in their press release so that once again DOH has formed conclusions that are not supported and in fact are contradicted by the data obtained in the PhyloChip study. Please see guest commentary/letter attached. Hopefully you will find it worthy of sharing with the people of Kauai.

Mahalo nui loa,

Bridget Hammerquist

(808)742-1037

----- Forwarded Message -----

Subject: Fwd: PhyloChip Report

Date: Thu, 6 Jun 2019 11:24:22 -1000

From: Carroll Cox <carroll@carrollcox.com>

To: bridgethammerquist@hawaiiantel.net

Sent from my iPad

Begin forwarded message:

> Hi Janet,

>

> Here is the final report. I attached both Word and PDF copies.

>

> Best regards,

> Eric

>

>

>

> Eric Dubinsky

> Project Scientist

> University of California, Berkeley

>

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>

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>

>> On May 20, 2019, at 12:31 PM, Eric DUBINSKY <edubinsky@berkeley.edu> wrote:

>>

>> Thanks for catching those typos, Janet.

>>

>> <Hawaii PhyloChip FINAL revised 5-20-19.docx>

>>

>>

>> Eric Dubinsky

>> Project Scientist

>> University of California, Berkeley

>>

>>

>>

>>

>>> On May 17, 2019, at 6:51 PM, Hashimoto, Janet <janet.hashimoto@doh.hawaii.gov> wrote:

>>>

>>> Eric: I re-read the report, and it reads very well now. Thanks for the edits and revision. Looks good, and only caught a few typos or missing words both in second paragraph of executive summary (see below). Otherwise, I think it's ready.

>>>

>>> Will be working with Myron on comm strategy and how we roll this out. A few people already know it's close to final and have requested report. Janet

>>>

>>>

>>> The goals of this study were to use PhyloChip microbial source tracking to measure the influence of human, animal and environmental inputs (or another word needs to be inserted here) on water quality in both Mahaulepu and Waikomo watersheds. PhyloChip is a DNA microarray that identifies over 59,000 different types of bacteria in a single sample. This technology enables a comprehensive survey of bacterial diversity in a sample and provides a genetic fingerprint of the microbial community. Unique community signatures based on thousands of DNA markers are used to very accurately detect and classify multiple fecal sources in a single test (Dubinsky et al. 2012, Cao et al. 2013, Dubinsky et al. 2016).

>>>

>>>

>>> <image001.png> <image003.png>

>>>

>>> Janet Y. Hashimoto

>>> Clean Water Branch
>>> 2827 Waimano Home Road. Hale Ola Building. Rm. 225
>>> Pearl City, HI 96782
>>> Phone: 808-586-5131
>>> www.health.hawaii.gov/cwb/
>>>

>>> From: Eric DUBINSKY <edubinsky@berkeley.edu>
>>> Sent: Friday, May 17, 2019 12:31 PM
>>> To: Hashimoto, Janet <janet.hashimoto@doh.hawaii.gov>
>>> Cc: DANIEL OROS <Oros.Daniel@epa.gov>; Gary Andersen <glandersen@lbl.gov>; Ueunten, Gary R. <gary.ueunten@doh.hawaii.gov>; Honda, Myron <Myron.Honda@doh.hawaii.gov>; Mikami, Clinton (Dale) <clinton.mikami@doh.hawaii.gov>; kirs@hawaii.edu; Wong, Alec Y <alec.wong@doh.hawaii.gov>
>>> Subject: Re: PhyloChip Report
>>>

>>> Hi All,
>>>

>>> Here is a clean copy of the report that incorporates all the comments I've received so far. Let me know if you have any additional comments or corrections.

>>>
>>> Thank you.
>>>

>>> Eric
>>>
>>>
>>>

>>> Eric Dubinsky
>>> Project Scientist
>>> University of California, Berkeley
>>>
>>> Laboratory / mailing address:
>>> Lawrence Berkeley National Laboratory
>>> 1 Cyclotron Rd., MS 70A-3317
>>> Berkeley, CA 94720
>>> (510) 486-5022
>>>
>>>
>>>
>>>

>>> On Apr 26, 2019, at 12:48 PM, Hashimoto, Janet <janet.hashimoto@doh.hawaii.gov> wrote:
>>>

>>> Eric and Gary: The revisions looked pretty good to me as well, so thanks Eric and Gary for the revised version of report. There are still a lot of typos, so may want to read through again (I provide some that I caught, below). Myron will be on leave until May 15. Meanwhile, will work on communication strategy (first to inform and work with certain stakeholders before any wider public statement). Thanks again for working with us on the Mahaulepu fecal source investigation studies. Very interesting results. Janet

>>>
>>> Typos:

>>> p. 3, Introduction, 1st sentence – Remove “the” in front of “Hawaii.”

>>> p. 4, top of page, insert “the” in front of “coastal zone” and change “be transport” to “be transported.”

>>> p. 5, last paragraph before Methods section, change “animals feces” to “animal feces.” Last sentence may read better if it said: “Water samples were sampled collected along...”

>>> p. 7, sentences below Figure 4, the date ranges look odd to me. It says: “9/27/17-9/28/16 and 10/18/17-10/19/16.” Shouldn’t the year ’16 be ’17?

>>> p. 8, paragraph that starts with “Fecal samples from suspected animal sources...”, add “of” right after “populations” so it reads “populations of pigs, cattle...”

>>> p. 8, last sentence in last paragraph, change “was” to “were” collected.

>>> p. 11, paragraph right before Figure 5, second to last sentence, change “Humans waste” to “Human waste.”

>>> p. 12, Figure 6, should say “Prediction ratios for each source type were generation generated through leave-one-out cross-validation implemented in SourceTracker2.”

>>> p. 13, right below Figure 7, add “were in “...yet source signals were mostly nominal and relative invariant...”

>>> p. 15, right before Figure 10, last sentence, change “...direct from sediments” to “...directly from sediments.”

>>> p. 15, under Waikomo source tracking section, 1st sentence. Awkward wording. Possibly change to: “In Waikomo Stream, no samplesnone of the 20 samples collected had strong human signal, ...”

>>> p. 19, 1st sentence in Discussion section sounds awkward. Should it say: “Variability in CP and ENT counts in both Waikomo and Mahaulepu streams do not appear to be linked to inputs from fecal inputs streambed sediments as fecal input sources.”

>>> p. 19, last sentence, change to “transported”: “...taxa may be transported into water column...”

>>> p. 20, first sentence, add “to”: “In the absence of molecular source tracking it is difficult to draw any conclusions from...”

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>>> <image001.png><image003.png>

>>>

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>>> From: OROS, DANIEL <Oros.Daniel@epa.gov>
>>> Sent: Friday, April 26, 2019 7:11 AM
>>> To: Eric DUBINSKY <edubinsky@berkeley.edu>; Hashimoto, Janet <janet.hashimoto@doh.hawaii.gov>

>>> Cc: Gary Andersen <glandersen@lbl.gov>; Ueunten, Gary R. <gary.ueunten@doh.hawaii.gov>; Honda, Myron <Myron.Honda@doh.hawaii.gov>; Mikami, Clinton (Dale) <clinton.mikami@doh.hawaii.gov>; kirs@hawaii.edu; Wong, Alec Y <alec.wong@doh.hawaii.gov>

>>> Subject: RE: PhyloChip Report

>>>

>>> Hi Eric:

>>>

>>> You addressed my one major concern about describing the close relationship of the injection

wells and W6 seep sample in signal abundance and bacteria composition, which are shown in Figure 13.

>>> [The ordination plot in Figure 13 compares the bacterial composition between seep samples and possible sources of human contamination (injection wells, cesspools and human stool). Samples that are similar in composition appear closer together on the plot.]

>>> I'm happy to see that you also discussed some of the early conclusions from the Part 1. Sanitary survey, which are the basis for this study. I am also satisfied with your interpretation of the PhyloChip study results. The new edits in track changes are really good. Let's see what DOH says.

>>>

>>> Daniel R. Oros, PhD
>>> Water Quality Assessment Section
>>> US EPA Region 9
>>> Water Division; Ecosystems Branch
>>> 75 Hawthorne Street (WTR-2-1)
>>> San Francisco, CA 94105-3901
>>> (415) 972-3583
>>> My Science Profile

>>>

>>>

>>>

>>> From: Eric DUBINSKY <edubinsky@berkeley.edu>
>>> Sent: Thursday, April 25, 2019 4:12 PM
>>> To: Hashimoto, Janet <janet.hashimoto@doh.hawaii.gov>
>>> Cc: Gary Andersen <glandersen@lbl.gov>; Gary Ueunten <gary.ueunten@doh.hawaii.gov>;
Honda, Myron <Myron.Honda@doh.hawaii.gov>; Mikami, Clinton (Dale)
<clinton.mikami@doh.hawaii.gov>; kirs@hawaii.edu; OROS, DANIEL <Oros.Daniel@epa.gov>;
alec.wong@doh.hawaii.gov

>>> Subject: Re: PhyloChip Report

>>>

>>> Hi All,

>>>

>>> Please find attached the revised report with changes made that were discussed during our call last week. I left on track changes so you can see the revisions. Let me know if you have additional comments or concerns.

>>>

>>> Thanks.

>>>

>>> Eric

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>>>

>>>

>>>

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>>>

>>> On Apr 17, 2019, at 11:19 AM, Hashimoto, Janet <janet.hashimoto@doh.hawaii.gov> wrote:

>>>

>>> Eric: Thanks for consideration. We can discuss further tomorrow. Meanwhile, I'll work with the monitoring section to gather the data to supplement report and provide the additional information that may help explain some of this. Janet

>>>

>>>

>>> On Apr 16, 2019, at 5:49 PM, Hashimoto, Janet <janet.hashimoto@doh.hawaii.gov> wrote:

>>>

>>> Hi Gary A. and Eric: I know we'll be discussing the Mahaulepu PhyloChip report more tomorrow, but wanted to have you consider something in advance of call. After further discussion here at DOH, I'm wondering if one of your conclusions could be softened. I'm wondering if you might consider some wording changes or clarifications to bullet 3 on page 18; and the paragraph right before Conclusions regarding the "false negatives" indication and also mentioned on page 15 first paragraph.

>>>

>>> The bullet as currently written may be misinterpreted and/or blown out of proportion, so I think we should be careful about being too definitively conclusive. It would help DOH if a little bit more contextual information were added.

>>>

>>> Bullet currently reads:

>>> "Strong human fecal signal was found in a coastal seep along the beachfront of the Poipu resort area. The strength of the human signal was comparable in magnitude and microbial composition to injection wells in the Waikomo watershed. This finding is evidence that injection wells contaminate beaches via groundwater seeps and may present serious health risks to beachgoers."

>>>

>>> As written, if I were a public member reading this, I would be quite alarmed and think there is a huge public health problem. Given that most of the sampling done to date in the Poipu area has not indicated or corroborated such findings, I would suggest adding that information here. Yes, it may be using the current FIB (ENT and CP), but the sampling in the usual BEACH monitoring has not shown this problem. Even though the W6 sample showed strong human signal and low CP and ENT levels, that was just one seep sample. According to Gary U, W6 also had extremely low flow and took quite some time to collect the sample during low tide. Given the low volumetric flow from this particular seep, I'm not sure that it would pose a significant public health problem, especially when the tide is in, which is when any public exposure issues would occur. Given low flow and when tide is in, it is very likely that the dilution would dissipate the fecal contaminants even though signal was high from this sample location.

>>>

>>> Could this bullet then be revised to provide additional information and change the alarm level in the conclusion? Suggest something like:

>>>

>>> "Strong human fecal signal was found in a coastal seep along the beachfront of the Poipu resort area. The strength of the human signal was comparable in magnitude and microbial composition to injection wells in the Waikomo watershed. This finding suggests is evidencethat injection wells may potentially contaminate beaches via groundwater seeps. and may present serious health risks to beachgoers. However, the sampling from this seep was taken during low tide, and the seep had extremely low volumetric flow. In addition, the ENT and C. perfringens fecal indicator bacteria levels in the sample were extremely low, and the long-term historical and current beach monitoring data has not indicated public health risk at Poipu beaches."

>>>

>>> I think it would be helpful to DOH and the public to understand the information in context with the other information we know about the site. Otherwise, DOH will have a difficult time explaining. It would be better if we try to provide the explanation up front with the report, rather than try to do damage control after the fact. We can discuss further during the call. Just wanted to provide this for your consideration. We greatly appreciate the early discussion, so that we can anticipate the

public reaction and be ahead of the potential media frenzy. Thanks. Janet

>>>

>>> As for false negatives, we can discuss potential explanation: maybe for cesspools, some residences may be using chlorine bleach or chlorine tablets that disinfects with each flush(?).

>>>

>>> <image001.png><image004.png>

>>>

>>> Janet Y. Hashimoto

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>>>

>>> From: Gary Andersen <glandersen@lbl.gov>

>>> Sent: Friday, April 12, 2019 2:08 PM

>>> To: Ueunten, Gary R. <gary.ueunten@doh.hawaii.gov>

>>> Cc: Honda, Myron <Myron.Honda@doh.hawaii.gov>; Eric DUBINSKY

<edubinsky@berkeley.edu>; Hashimoto, Janet <janet.hashimoto@doh.hawaii.gov>; Mikami, Clinton

(Dale) <clinton.mikami@doh.hawaii.gov>; kirs@hawaii.edu; DANIEL OROS

<Oros.Daniel@epa.gov>; Wong, Alec Y <alec.wong@doh.hawaii.gov>

>>> Subject: Re: PhyloChip Report

>>>

>>> Okay. That works for us.

>>>

>>> Gary

>>> Sent from my iPhone

>>>

>>>

>>> On Apr 12, 2019, at 4:40 PM, Ueunten, Gary R. <gary.ueunten@doh.hawaii.gov> wrote:

>>>

>>> ok

>>>

>>> From: Honda, Myron

>>> Sent: Friday, April 12, 2019 1:22 PM

>>> To: Eric DUBINSKY <edubinsky@berkeley.edu>; Gary Andersen

<glandersen@lbl.gov>; Hashimoto, Janet <Janet.Hashimoto@doh.hawaii.gov>; Mikami, Clinton

(Dale) <clinton.mikami@doh.hawaii.gov>; Ueunten, Gary R. <gary.ueunten@doh.hawaii.gov>;

'kirs@hawaii.edu' <kirs@hawaii.edu>

>>> Cc: DANIEL OROS <Oros.Daniel@epa.gov>; Wong, Alec Y

<alec.wong@doh.hawaii.gov>

>>> Subject: RE: PhyloChip Report

>>>

>>> Hi all,

>>> Thank you for a very productive meeting this morning. We would like to schedule a follow up call on Thursday 4/18/19 at 10:30 am HST. Please let me know if this time and date works for you.

>>> We would like to begin discussions on talking points and a communication strategy for when we publicly release the report. A lot of people are eagerly awaiting the final report.

>>> 2827 Waimano Home Road
>>> Pearl City, HI 96782
>>> (808)-586-4309
>>>

>>> From: Gary Andersen <glandersen@lbl.gov>
>>> Sent: Friday, March 29, 2019 12:04 PM
>>> To: Hashimoto, Janet <janet.hashimoto@doh.hawaii.gov>; edubinsky@berkeley.edu
>>> Cc: Honda, Myron <Myron.Honda@doh.hawaii.gov>; DANIEL OROS
<Oros.Daniel@epa.gov>; Mikami, Clinton (Dale) <clinton.mikami@doh.hawaii.gov>
>>> Subject: Re: FW: PhyloChip Report
>>>

>>> Hi Janet,
>>> I agree that we probably need a conference call to go over some of the details. It is
spring break next week and both Eric and myself have family vacations. We can set up a time after that
to talk.

>>> Thanks,
>>> Gary
>>>
>>>
>>>

>>> On 3/28/19 6:11 PM, Hashimoto, Janet wrote:
>>>

>>> Hi Eric: Thanks so much for providing the long-awaited report. I am now on an
IPA assignment to Hawaii DOH, so will be reviewing as DOH (with Myron, Dale, et al), instead of
EPA. I had to forward this to myself from my EPA address. Please use my new contact information
(janet.hashimoto@doh.hawaii.gov). Otherwise, I do check my EPA email, but infrequently. I took a
quick review. Very interesting results! The false negatives for Clostridium and Entero were a bit
baffling and disturbing. The injection well seep results were exactly as Watson Okubo suspected.
Would probably be helpful to have a conference call to discuss details with you. Thank you. Janet

>>> <image001.png><image002.png>
>>>

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>>> From: Hashimoto, Janet <Hashimoto.Janet@epa.gov>
>>> Sent: Thursday, March 28, 2019 2:48 PM
>>> To: Hashimoto, Janet <janet.hashimoto@doh.hawaii.gov>
>>> Subject: Fw: PhyloChip Report
>>>

>>> Janet Hashimoto
>>> US EPA Region 9
>>> Manager, Water Quality Assessment Section
>>> 75 Hawthorne Street (WTR-2-1)

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Phone 510-495-2795, Cell: 510-501-2149

URL: <http://biosciences.lbl.gov/profiles/gary-andersen/>

http://ourenvironment.berkeley.edu/people_profiles/gary-andersen/