

HUI O PIKOILOA, an unincorporated association,
LIANNE CHING, BETTYE HARRIS, RICHARD
MCCREEDY, JULIANNE MCCREEDY, JESSE
REAVIS, and
GRANT YOSHIMORI
c/o 45-464 Lipalu Street
Kaneohe, HI 96744
Telephone No.: (808) 236-0502

LAND USE COMMISSION
STATE OF HAWAII

2019 DEC -9 A 10:44

INTERVENORS PRO SE

BEFORE THE LAND USE COMMISSION

STATE OF HAWAII

IN THE MATTER OF:	) DOCKET NO. A17-804
)
HAWAIIAN MEMORIAL LIFE PLAN,	) STATEMENT OF POSITION
LTD., a Hawaii Corporation	) OF
	) LIANNE CHING, BETTYE HARRIS,
To Amend The Conservation Land Use	) RICHARD MCCREEDY, JULIANNE
District Boundary Into The Urban Land Use	) MCCREEDY, JESSE REAVIS, and
District For Approximately 53.449 Acres Of	) GRANT YOSHIMORI
Land At Kāne'ohe, Island of Oahu, State of)
Hawai'i, Tax Map Key: (1) 4-5-003:por.001)

STATEMENT OF POSITION

OF

LIANNE CHING, BETTYE HARRIS, RICHARD MCCREEDY, JULIANNE

MCCREEDY, JESSE REAVIS, and GRANT YOSHIMORI

We hereby inform you, per the Land Use Commission Prehearing Order dated February 20, 2009, that GRANT YOSHIMORI, an individual (hereafter "Intervenor Yoshimori"), RICHARD MCCREEDY and JULIANNE MCCREEDY, husband and wife (hereafter collectively "Intervenor McCreedy"), LIANNE CHING, an individual (hereafter "Intervenor Ching"), BETTYE HARRIS, and individual (hereafter "Intervenor Harris"), and JESSE REAVIS, an individual (hereafter "Intervenor Reavis"), hereafter referred to

collectively as "Intervenors"; oppose the Petition of Hawaiian Memorial Life Plan, Ltd. (hereinafter referred to as the "Petitioner") under Docket No. A17-804 to reclassify approximately 53.449 acres of land for the Hawaiian Memorial Park Cemetery Expansion project from the Conservation District to the Urban District at Kaneohe, Koolauloko, Oahu.

Non-Compliance with the Hawaii State Plan

Reclassification of the subject property, would violate HRS § 205-16 Compliance with the Hawaii State Plan, which states:

§205-16 Compliance with the Hawaii state plan. No amendment to any land use district boundary nor any other action by the land use commission shall be adopted unless such amendment or other action conforms to the Hawaii state plan. [L 1975, c 193, §12; am L 1985, c 230, §5]

In particular, the HRS §226-12 of the Hawaii State Plan states:

§226-12 Objective and policies for the physical environment--scenic, natural beauty, and historic resources. (a) Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural historical resources.

(b) To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:

- (1) Promote the preservation and restoration of significant natural and historic resources.
- (2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.
- (3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.
- (4) Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.

The subject property serves as a green-belt which is visible from much of Kaneohe. The undeveloped property does "enhance the visual and aesthetic enjoyment of the mountains", as well as landscapes.

In addition, the HRS §226-12 of the Hawaii State Plan states:

§226-11 Objectives and policies for the physical environment—land-based, shoreline, and marine resources. (a) Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:

- (1) Prudent use of Hawaii's land-based, shoreline, and marine resources.
- (2) Effective protection of Hawaii's unique and fragile environmental resources.
- (b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:
 - (1) Exercise an overall conservation ethic in the use of Hawaii's natural resources.
 - (2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.
 - (3) Take into account the physical attributes of areas when planning and designing activities and facilities.
 - (4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.
 - (5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.
 - (6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii.

The subject property is home to the endangered Hawaiian Blackline Damselfly, and qualifies the property to be protected per HRS §226-12 Section 6.

Non-Compliance with Koolaupoko Sustainable Communities Plan

Reclassification of the subject property would violate HRS § 205-2(a) and the Koolaupoko Sustainable Communities Plan.

HRS § 205-2(a) States:

“In establishing the boundaries of the districts in each county, the commission shall give consideration to the master plan or general plan of the county”.

The Koolaupoko Sustainable Community Plan is part of the General Plan for the City and County of Honolulu, and is referenced by HRS § 205-2(a). The Koolaupoko Sustainable Communities Plan (KSCP), Section 3-19, on the planned Hawaiian Memorial Park (HMP) expansion currently states:

“Any proposed expansion by Hawaiian Memorial Park must include a 150-foot buffer from residential homes, a 2,000-foot buffer from the Pohai Nani senior living community, and a phased approach to sales and marketing...” “specifically

prohibits urbanizing the undeveloped slopes of Oneawa Hills where the petition area is located, first by placing the petition area outside of the Urban Community Boundary and within the preservation boundary, and second by specifically stating that the boundary should not change in this area.”

The current proposed development severely encroaches on the 2,000-foot buffer by over 30%, and is non-compliant to the KSCP.

Flooding Concerns

The proposed project does not properly account for the additional runoff which will be generated, causing significant threat to life and property to the downhill residential community.

Threat to Kawa Stream and Kaneohe Bay

The petition area lies within the Kawa Stream watershed, which is part of the larger Kaneohe Bay watershed. Kaneohe Bay has been designated a Class “AA” water body; and Kawa Stream has been categorized as a “impaired water body” by the State of Hawaii under the Federal Clean Water Act.

The Intervenors are concerned about the potential impact of the proposed project to Kawa Stream and Kaneohe Bay.

Petition Area Meets Guidelines for Conservation Districts

HRS § 205-2(e) describes lands for the conservation district. Among the criteria for conservation district are:

- “Protecting watersheds and water sources”,
- “preserving scenic and historic areas”,
- “providing park lands, wilderness, and beach reserves”,
- “preventing floods and soil erosion”,

- “open space areas whose existing openness, natural condition, or present state of use, if retained, would enhance the present or potential value of abutting or surrounding communities, or would maintain or enhance the conservation of natural or scenic resources”

Per the concerns raised above, the Intervenor's position is that the subject property qualifies to remain in the Conservation District per HRS § 205-2(e)

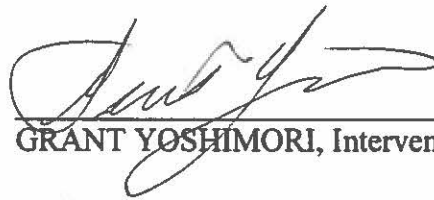
Cemetery Capacity is Sufficient

There is sufficient cemetery capacity in Hawaii to handle the coming needs for burials.

Other cemeteries are currently expanding and marketing to fill burial plots, indicating that there is enough burial supply. In addition, other cemeteries have additional undeveloped land which was not included in Hawaiian Memorial's assessment of future burials.

In addition, Hawaiian Memorial can increase cemetery density to continue generating revenue for the foreseeable future.

Dated: Kaneohe, Hawaii, December 9, 2019



GRANT YOSHIMORI, Intervenor Pro Se

CERTIFICATE OF SERVICE

I hereby certify that due service of a copy of the within document was made by depositing the same with the U. S. mail, postage prepaid, or by hand delivery, on December 9, 2019, addressed to:

MARY ALICE EVANS

BY HAND DELIVERY

Director

Office of Planning, State of Hawaii

235 S. Beretania St. 6th Floor

Honolulu, Hawaii 96813

DAWN TAKEUCHI-APANA, ESQ.

BY HAND DELIVERY

Deputy Attorney General

Department of the Attorney General

425 Queen Street

Honolulu, Hawaii 96813

KATHY K. SOKUGAWA

BY HAND DELIVERY

Acting Director

City and County of Honolulu

Department of Planning and Permitting

650 South King Street

Honolulu, Hawaii 96813

CHAIR, PLANNING COMMISSION

BY HAND DELIVERY

City and County of Honolulu

650 South King Street, 7th Floor

Honolulu, Hawaii 96804-2359

PAUL S. AOKI, ESQ.

BY HAND DELIVERY

Acting Corporation Counsel

Office of the Corporation Counsel

City and County of Honolulu

530 South King Street, Room 110

Honolulu, Hawaii 96813

JAY MORFORD
Hawaiian Memorial Life Plan, Ltd.
1330 Maunakea Street
Honolulu, Hawaii 96817

BY HAND DELIVERY

BENJAMIN MATSUBARA, ESQ
Matsubara, Kotake & Tabata
888 Mililani Street, Suite 308
Honolulu, Hawaii 96813

BY HAND DELIVERY

DATED: Honolulu, Hawaii, December ⁹__, 2019.



GRANT YOSHIMORI, ET. AL.

Intervenors

HUI O PIKOILOA, an unincorporated association,
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JULIANNE MCCREEDY, JESSE REAVIS, and
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LTD., a Hawaii Corporation)	PETITION TO INTERVENE;
)	CERTIFICATE OF SERVICE
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District Boundary Into The Urban Land Use)	
District For Approximately 53.449 Acres Of)	
Land At Kāneʻohe, Island of Oahu, State of)	
Hawaiʻi, Tax Map Key: (1) 4-5-003:por.001)	
)	
)	

LIST OF EXHIBITS

LIST OF WITNESSES

CERTIFICATE OF SERVICE

I hereby certify that due service of a copy of the within document was made by depositing the same with the U. S. mail, postage prepaid, or by hand delivery, on December 7, 2019, addressed to:

MARY ALICE EVANS

BY HAND DELIVERY

Director
Office of Planning, State of Hawaii
235 S. Beretania St. 6th Floor
Honolulu, Hawaii 96813

DAWN TAKEUCHI-APANA, ESQ.

BY HAND DELIVERY

Deputy Attorney General
Department of the Attorney General
425 Queen Street
Honolulu, Hawaii 96813

KATHY K. SOKUGAWA

BY HAND DELIVERY

Acting Director
City and County of Honolulu
Department of Planning and Permitting
650 South King Street
Honolulu, Hawaii 96813

CHAIR, PLANNING COMMISSION

BY HAND DELIVERY

City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96804-2359

PAUL S. AOKI, ESQ.

BY HAND DELIVERY

Acting Corporation Counsel
Office of the Corporation Counsel
City and County of Honolulu
530 South King Street, Room 110
Honolulu, Hawaii 96813

JAY MORFORD

BY HAND DELIVERY

Hawaiian Memorial Life Plan, Ltd.
1330 Maunakea Street
Honolulu, Hawaii 96817

BENJAMIN MATSUBARA, ESQ

BY HAND DELIVERY

Matsubara, Kotake & Tabata
888 Mililani Street, Suite 308
Honolulu, Hawaii 96813

DATED: Honolulu, Hawaii, December 9, 2019.



GRANT YOSHIMORI, ET. AL.

Intervenors

DOCKET NO./PETITIONER: A17-804/HAWAIIAN MEMORIAL LIFE PLAN, LTD.PARTY: GRANT YOSHIMORI ET. AL.LIST OF EXHIBITS

EXHIBIT NUMBER	DESCRIPTION	PARTY: OBJECTIONS	ADMIT
1	Online Petition and Electronic Signatures and Comments		
2	Signed Petition of Individuals Opposing Project		
3	Resume of Dana Alden, Ph.D.		
4	Resume of Winston Welch		
5	Resume of Nathan Yuen		
6	Resume of Steven Businger, Ph.D.		
7	Letter from Councilmember Kymberly Pine to Daniel Orodenker and Kathy Sokugawa dated September 24, 2019		
8	Letter from Administrator David Smith to Ronald Sato dated October 31, 2018		
9	Resume of M. Lee Goff, Ph.D.		
10	Excerpts from Federal Register Volume 77, No. 181		

DOCKET NO./PETITIONER: A17-804/HAWAIIAN MEMORIAL LIFE PLAN, LTD.PARTY: GRANT YOSHIMORI ET. AL.LIST OF EXHIBITS

EXHIBIT NUMBER	DESCRIPTION	PARTY: OBJECTIONS	ADMIT
11	Resume of John Higham		
12	Hawaii Business Article: The Cost of Dying https://www.hawaiibusiness.com/the-cost-of-dying/		
13	CBS News Article: A buried problem at country's top funeral home chain?		
14	Resume of Ken Middleton		
15			
16			
17			
18			
19			
20			

DOCKET NO./PETITIONER: A17-804/ HAWAIIAN MEMORIAL LIFE PLAN, LTDPARTY: GRANT YOSHIMORI ET. AL.**LIST OF WITNESSES**

NAME/ORGANIZATION/POSITION (List in Order of Appearance)	TO BE QUALIFIED AS AN EXPERT IN:	SUBJECT MATTER	LENGTH OF DIRECT
DANA, ALDEN, PH.D University of Hawaii Professor	Marketing and Consumer Psychology	Funeral and Burial Trends	.5 hour
KEN MIDDLETON Hawaii Ash Scatterings	Ash Scattering	Funeral and Burial Practices	.5 hour
WINSTON WELCH Outdoor Circle Executive Director	Forest Conservation and Environment	Forest Conservation and Environment	.5 hour
NATHAN YUEN Sierra Club	Forest Conservation and Environment	Forest Conservation and Environment	.5 hour
STEVEN BUSINGER, PH.D University of Hawaii Professor	Meteorology	Meteorology	.5 hour
M. LEE GOFF, PH.D University of Hawaii Professor	Entomology	Blackline Damselfly	.5 hour
JOHN HIGHAM Retired Civil Engineer	Civil Engineering	Development plan	1 hour

EXHIBIT 1

SaveKaneohe.org

Recipient: State of Hawaii Land Use Commission

Letter: Greetings,
Save Kaneohe Conservation Land from Graveyard Expansion

Signatures

Name	Location	Date
Grant Yoshimori	Kaneohe, HI	2019-10-16
Lucinda Kodani-Stenek	Honolulu, HI	2019-10-19
Kathleen O'Malley	Kaneohe, HI	2019-10-20
Maya Blom Walker	Boulder, US	2019-10-20
Jasmine Lopez	Royal Oak, US	2019-10-20
Sylvia Twahirwa	Salt Lake City, US	2019-10-20
Adan Barraza	Denver, US	2019-10-21
Ron Peterson	Midland, US	2019-10-21
Andrew Allshouse	Broomfield, US	2019-10-21
William Trindl	Milwaukee, US	2019-10-21
Makayla Gilbert	Wadsworth, US	2019-10-21
hailey culver	Macomb, US	2019-10-21
Elms Zhang	Novi, US	2019-10-21
Abby Johnston	Plymouth, US	2019-10-21
Katelyn Morris	Denver, US	2019-10-21
Caiden Pezza	Troy, US	2019-10-21
Anthony Sitto	Farmington, US	2019-10-21
Shaun McCreedy	Kaneohe, HI	2019-10-22
DRUSILLA TANAKA	Kaneohe, HI	2019-10-22
Melina Hicks	Akron, US	2019-10-22

Name	Location	Date
Jerilyn Yamashiro	Kaneohe, HI	2019-10-22
Alec Holyszko	Canton, US	2019-10-22
Rabee Alzamara	Mason, US	2019-10-22
John Zenner	Alameda, CA	2019-10-22
Larry Brown	West Chester, US	2019-10-22
Chris Roach	Bloomfield Hills, US	2019-10-22
Jasmine Konehwan	nolensville, US	2019-10-22
Chrissy Angellina	Broomall, US	2019-10-22
Annette Irvello	Broomall, PA	2019-10-22
Candice Engolla	Saint Petersburg, US	2019-10-23
Susan Wilkinson	Grass Valley, CA	2019-10-23
Erica Saldañariaga	Miami, US	2019-10-23
Michele LaPorte	Schaumburg, US	2019-10-23
Dean Harms	Washington, US	2019-10-23
Joshua Crook	Houston, US	2019-10-23
ana rodriguez	Miami, US	2019-10-23
Cade Brown	Murfreesboro, US	2019-10-23
Stephanie Meza	Dallas, US	2019-10-23
Sunny Dillon	Harrison, US	2019-10-23
Valeria Boza	Miami, US	2019-10-23
Edward Lewis	Kailua, HI	2019-10-23
Michele Bellamy	Danville, CA	2019-10-23

Name	Location	Date
Lauren Sanders	West Chester, US	2019-10-23
Lydia Gerstle	Cincinnati, US	2019-10-23
Norm Wilmes	Yuba City, US	2019-10-24
Elizabeth Graham	Honolulu, HI	2019-10-24
Dawn Strong	Kaneohe, HI	2019-10-24
Cynthia McCreedy	Kailua, HI	2019-10-25
Mary Yannell	Kaneohe, HI	2019-10-25
David Wint	Windermere, US	2019-10-25
Susan McBride	Kaneohe, HI	2019-10-25
Derek Sircher	Kentucky	2019-10-25
Mary Chrisman	Tucson, US	2019-10-25
Kaitlyn McNamara	High Point, US	2019-10-25
Josh Giese	Kansas City, US	2019-10-25
Harry Franz	San Jose, CA	2019-10-25
Jennifer Guerrero	El Paso, US	2019-10-25
Lucas Lamb	Phoenix, US	2019-10-25
Marlin Polanco	Worcester, US	2019-10-25
Rhiannon Callahan	Kaneohe, HI	2019-10-25
Grant Kono	Kailua, HI	2019-10-26
Dayne Kaawalaule	Pearl City, HI	2019-10-26
Keani Wong	Honolulu, HI	2019-10-26
Tyler Appleton	Cincinnati, US	2019-10-26

Name	Location	Date	Name	Location	Date
Allison Price	Marbury, US	2019-10-26	Ryan Shin	Mc Lean, US	2019-10-26
Alexandra Balgos	Kapolei, HI	2019-10-26	Nicholas Wilbur	Jacksonville, US	2019-10-26
Viola Wong	Waipahu, HI	2019-10-26	Valeria Castillo	Humble, US	2019-10-26
Serena Rivera	Kaneohe, HI	2019-10-26	Luis Morales	Fort Lauderdale, US	2019-10-26
KOMALIE Dias-Blake	Honolulu, HI	2019-10-26	Arlene Zuckerman	Jamaica, US	2019-10-26
Dorian Verdugo	Honolulu, HI	2019-10-26	arianna dixon	Houston, US	2019-10-26
KEHau Lyons	Oakland, CA	2019-10-26	Shy Phillip	Kaneohe, HI	2019-10-26
Leeya Alama-Francis	Kaneohe, US	2019-10-26	Aysia Yancy	Stone Mountain, US	2019-10-26
Michelle Murakami	Kaneohe, HI	2019-10-26	Soleil Hayes-Pollard	Brookline, US	2019-10-26
George Kotronis	Southgate, US	2019-10-26	Caeden Conley	Sacramento, US	2019-10-26
Nancy Vincent-Green	San Rafael, CA	2019-10-26	Kapika Verdugo	Honolulu, HI	2019-10-26
Weston Leitch	Sultan, US	2019-10-26	Austin Rottman	Charlotte, US	2019-10-26
Adam nathanael	Kaneohe, HI	2019-10-26	Sally Thrasher	Honolulu, HI	2019-10-26
Stacy Barretto	Honolulu, HI	2019-10-26	Ava Sharer	Indianapolis, US	2019-10-26
Luana Low	Kaneohe, HI	2019-10-26	Valerie Meyers	Montrose, CO	2019-10-27
Amber Lua	Honolulu, HI	2019-10-26	Catherine Huss	Orangeburg, US	2019-10-27
Titus Kaleikini	Kaneohe, HI	2019-10-26	Brisbane Smithson	Phoenix, US	2019-10-27
Burke Kamauoha	Lale, US	2019-10-26	devon cronin	Rochester, US	2019-10-27
Michelle Bogus	Kaneohe, HI	2019-10-26	Zoe Bridges	Humble, US	2019-10-27
Noah Perlman	Citrus Heights, US	2019-10-26	Katelyn Hubbard	Fort Lauderdale, US	2019-10-27
Peter Ruppert	Wyoming, US	2019-10-26	Jennifer Johnson	Reno, US	2019-10-27
Mike Hawk	Humble, US	2019-10-26	bob jones	Kingwood, US	2019-10-27

Name	Location	Date	Name	Location	Date
Thomas Urbina	San Antonio, US	2019-10-27	Matt Seagriff	Greenville, US	2019-10-28
Taylor Samset	Austin, US	2019-10-27	Aleyna Sozuduz	Mount Prospect, US	2019-10-28
Justis Robertson	Mesa, US	2019-10-27	marcia Nelson	San Antonio, US	2019-10-28
Keylin Sam	Los Angeles, US	2019-10-27	Benjamin Torres Garcia	Phoenix, US	2019-10-28
Ava Monastero	Schaumburg, US	2019-10-27	Bryson Gammage	Altamonte Springs, US	2019-10-28
TRENT MEEKIN	Honolulu, HI	2019-10-27	Zharla Holland	Mcdonough, US	2019-10-28
cynthia Jovanovic	wickliffe, US	2019-10-27	Hailey Welch	Overland Park, US	2019-10-28
Jennifer Adams	Kaneohe, HI	2019-10-28	Kevin Alvarez	Chicago, US	2019-10-28
Sarah Lee	Honolulu, HI	2019-10-28	Diana Gonzalez	Saint Petersburg, US	2019-10-28
Kawika Kaaihue	Kaneohe, HI	2019-10-28	Jesus Villanueva	Georgetown, US	2019-10-28
Francis Kau	Honolulu, HI	2019-10-28	Karter Seegmiller	Washington terrace, US	2019-10-28
Carlos Mata	Phoenix, US	2019-10-28	Albert Mendez	US	2019-10-28
Alexandra Lopez	Phoenix, US	2019-10-28	Chester Kau	Pearl City, HI	2019-10-28
Johnny reyes	phoenix, US	2019-10-28	Ryanne Burnett	Dover, DE	2019-10-28
Sabrina Thommen	Sanford, US	2019-10-28	Ryanne Burnett	Ewa Beach, HI	2019-10-28
Debbie Rodriguez	Fresno, US	2019-10-28	Gil Tibayan	Kaliua, HI	2019-10-28
Jordan Molina	Hayward, US	2019-10-28	Kaonohlokala Brede	Vancouver, WA	2019-10-28
Marcus Johnson	Lake Oswego, US	2019-10-28	Ruth Barbadiello	Honolulu, HI	2019-10-28
Kimberly garda	Solvang, US	2019-10-28	Kelson Morales	Denver, US	2019-10-28
Erubiel Mendoza	Phoenix, US	2019-10-28	Kendall Decker	Lakeworth, US	2019-10-28
Jessica Lauaki	Kaneohe, HI	2019-10-28	riley pietsch	Yorba Linda, US	2019-10-28
Kayla Spencer	Honolulu, HI	2019-10-28	Logan Richardson	Oklahoma City, US	2019-10-28

Name	Location	Date	Name	Location	Date
Caleb Sloop	Boone, US	2019-10-28	James Brede	Las Vegas, NV	2019-10-29
Grace Billings	Phoenix, US	2019-10-28	Debbie Sur	Kaneohe, HI	2019-10-29
Taylor Guzman	Land O Lakes, US	2019-10-28	Kori Brede	Scottsdale, AZ	2019-10-29
Drake Banks	Homosassa, US	2019-10-28	Charlotte aril	Kaneohe, HI	2019-10-29
Alex Bradley	Barrington, US	2019-10-28	Julie Garey	Salem, MA	2019-10-29
Jessica Pineda	Haines City, US	2019-10-28	Kathryn Watt-Morton	Pahoa, HI	2019-10-30
Jace Little	Micktenney, US	2019-10-28	Trina Kaneakalau	Kaneohe, HI	2019-10-30
Ava Barnhill	Arroyo Grande, US	2019-10-28	Jean Kanda	Kaneohe, HI	2019-10-30
Piyush Komali	Charlotte, US	2019-10-28	Deborah Hauanio	Kailua-Kona, HI	2019-10-30
Hailey Dalton	Vairco, US	2019-10-28	Kai Holland	Kaneohe, HI	2019-10-30
Hope Fowler	Imperial, US	2019-10-28	Joslyn McLaughlin	Kaneohe, HI	2019-10-30
JON INWOOD	Brooklyn, NY	2019-10-28	Vanna Morningstar	Walsenburg, CO	2019-10-31
Elise Dubrule	Holden, US	2019-10-28	Ranette Kupau Miranda	Kaneohe, HI	2019-10-31
Chloe' Martinez	Fort Lauderdale, US	2019-10-28	Lou Amber Ferreira	Kaneohe, HI	2019-10-31
Thomas Payne	Dallas, US	2019-10-28	Emma Hewett	Kaneohe, HI	2019-10-31
Julietta Vargas	Boca raton, US	2019-10-28	Nicole Do	Kaneohe, HI	2019-10-31
Jordan Gosselin	Tampa, US	2019-10-28	Christopher Kau	Honolulu, HI	2019-10-31
Marvin Salinas	Lake Worth, US	2019-10-28	Alyssa Tatum	Durango, CO	2019-10-31
Isidora Montenegro	Orlando, US	2019-10-28	Taryana Kahaulelio	Pico Rivera, CA	2019-10-31
Keaulaikalani Gier	Salem, OR	2019-10-29	Dawn Hayashi	Walpahu, HI	2019-10-31
Denver Kealahelaikapo Tay'a	Laie, HI	2019-10-29	Brian Engcabo	Kaneohe, HI	2019-10-31
Lawrence Mau	Honolulu, HI	2019-10-29	Sandy Dudolt	Walanae, HI	2019-10-31

Name	Location	Date	Name	Location	Date
KRISTEN MANINON	Honolulu, HI	2019-10-31	Tavia Acedo	Tucson, US	2019-10-31
Lynnette H. Wong	Kaneohe, US	2019-10-31	Ava Venturini	Katy, US	2019-10-31
Jodi Kahua	Kaneohe, HI	2019-10-31	Raven Brown	Hedgesville, US	2019-10-31
Sam Morningstar	Walsenburg, CO	2019-10-31	Jennifer Furr	riverside, US	2019-10-31
dylan neville	Reno, US	2019-10-31	Melanie Apthorp	Seattle, US	2019-10-31
Jalen Cockle	Salt Lake City, US	2019-10-31	Reed Peterson	Andover, US	2019-10-31
sayler russell	Heber City, US	2019-10-31	Yasmin McFee	Lenoir, US	2019-10-31
Caillie Nock	Alpharetta, US	2019-10-31	Alberth Ernesto Cuervo Romero	Taminango Narfio, US	2019-10-31
Ace Nohavelastname	Salt Lake City, US	2019-10-31	Marlea Tabajunda	San Diego, US	2019-10-31
stephanie prvette	Canton, US	2019-10-31	kaylee o'donnell	Cuyahoga Falls, US	2019-10-31
Marcine McBride	West Babylon, NY	2019-10-31	john william Decoudres	Atlanta, US	2019-10-31
Mckall Garcia	Amarillo, US	2019-10-31	Tara Kaalakamanu	New Bern, NC	2019-10-31
Sush Mullur	Seattle, US	2019-10-31	Sandy Teixeira	Kaneohe, HI	2019-10-31
Joshu Joshua Emerson	Riverside, US	2019-10-31	Sarah Pratt	Kaneohe, HI	2019-10-31
Daisy Fajardo	Queens, US	2019-10-31	Sara Yogi	San Francisco, US	2019-10-31
A A	US	2019-10-31	Matt Ho	Santa Rosa, CA	2019-10-31
Joshua Cho	Las Vegas, US	2019-10-31	Jeanne Ferreira	Kaneohe, HI	2019-10-31
Quintin Southwick	Parrish, US	2019-10-31	Marcos Gonzalez	Salinas, US	2019-10-31
Sierra Williams	Tampa, US	2019-10-31	Patrick Green	Kaneohe, HI	2019-11-01
Catalina YU	San Francisco, US	2019-10-31	Ridhima Pandey	US	2019-11-01
Bianca Ramaila	Waianae, US	2019-10-31	Dalia Pina	Saint Louis, US	2019-11-01
Cody Marcum	Hyattsville, US	2019-10-31			

Name	Location	Date	Name	Location	Date
Emily Shahaf	Sherman Oaks, US	2019-11-01	Adrian Gutierrez	Logansport, US	2019-11-02
Claudia Butz	Saint Louis, US	2019-11-01	Garrin Johnson	Roanoke, US	2019-11-02
Nicole Beaulieu	Chicopee, US	2019-11-01	Deborah Clements	Walsenburg, CO	2019-11-03
Rashakun Ceasor	New Orleans, US	2019-11-01	Gina LePert	Huntington Beach, US	2019-11-03
Nate Kappes	Fort Lauderdale, US	2019-11-01	Robert O'Conner	Whittier, CA	2019-11-03
Ellen Akaka	Kaneohe, HI	2019-11-01	susan greene	Queens Village, US	2019-11-03
Roxanne Myers	Winterville, US	2019-11-01	Crystal Lee	Atlanta, US	2019-11-03
Felice Bell	Miami, US	2019-11-02	Arisha Cabrido	Henderson, US	2019-11-03
Christopher Gregory	Torrance, US	2019-11-02	Syd Colte	New York, US	2019-11-03
Alexander Mays	Fairfield, US	2019-11-02	Ankita Tyagi	Goodyear, US	2019-11-03
Angel Maciel	US	2019-11-02	Nicole fairbanks	Auburn, US	2019-11-03
Julia Rahn	Long Beach, CA	2019-11-02	Paul Duvauchelle	Atlanta, GA	2019-11-03
Louis Bisson	Saco, US	2019-11-02	Kathryn Gibson	Chicago, US	2019-11-03
Colin Ceresa	Arlington, US	2019-11-02	Haven Lynch	Lebanon, US	2019-11-03
Gala P.	Chalfont, US	2019-11-02	Connor Briggs	Chesapeake, US	2019-11-03
Anne Rogers	Saint Petersburg, US	2019-11-02	Elizabeth DiRaimondo	Cary, US	2019-11-03
Kahi Lancaster	Las Vegas, US	2019-11-02	Cortney Foster	Rensselaer, US	2019-11-03
Tiffany Terrell Marshall	Duncanville, US	2019-11-02	Victoria Shih	Plano, US	2019-11-03
Chien Jardine	Honolulu, HI	2019-11-02	Hank Adachi	Kaneohe, HI	2019-11-03
Oor OOOOOOOOOFFFFFFFFF	Woodstock, US	2019-11-02	Viggo Fuentes	York, US	2019-11-03
Tracy Kirchmann	Naperville, US	2019-11-02	A A	Austin, US	2019-11-03
			Savannah Wilkinson	Leonardtown, US	2019-11-03

Name	Location	Date	Name	Location	Date
Aiden Gumper	East Brunswick, US	2019-11-03	Joseph Cioffi	Gaithersburg, MD	2019-11-04
Amanda Beedle	Sacramento, US	2019-11-03	Leslie Scopin	Ewa Beach, HI	2019-11-04
Jennifer Joshua	Houston, US	2019-11-04	Cailee Gomes	Kihel, HI	2019-11-04
Kaelene Wong	Honolulu, HI	2019-11-04	Michele Kolman	Broadway, VA	2019-11-04
Justice Denis-Lui	Kaneohe, HI	2019-11-04	anthony kaill	Kaneohe, HI	2019-11-04
Janice Gomes	Select, HI	2019-11-04	Tiffany Flowers	Clearlake, US	2019-11-04
Natalya Anissimova	Apex, US	2019-11-04	Alec Devallance	Ridgway, US	2019-11-04
Taylor Hudcovic	Kaneohe, HI	2019-11-04	Lisa Morales	Spokane, WA	2019-11-04
Kendera Singh	Honolulu, US	2019-11-04	Habeebat Elwalid	Avenel, US	2019-11-04
Tilottama Samal	Folsom, US	2019-11-04	David I	Los Angeles, US	2019-11-04
Faye Hansen	US	2019-11-04	Luke Valasek	Omaha, US	2019-11-04
Nicole Texeira	Wailuku, HI	2019-11-04	Elaine Moya	Costa Mesa, US	2019-11-04
Erica Lui	Honolulu, HI	2019-11-04	Carol Hynek	Marietta, GA	2019-11-04
Claira Rettig	Union, US	2019-11-04	Tommy Simmers	Harrisonburg, VA	2019-11-05
Itzel Andrade	Yuma, US	2019-11-04	Edwin Belardo	Huntington Station, US	2019-11-05
Devin Keeler	Ann Arbor, US	2019-11-04	Carleen Elvenia	Kailua, US	2019-11-05
Aiden Macias	Chula Vista, US	2019-11-04	Rori Scopin	Gaithersburg, MD	2019-11-05
Christina Wong	Las Vegas, NV	2019-11-04	Micki Kauwahu-Key	Walanae, US	2019-11-05
Jack Denis	Adanta, GA	2019-11-04	Mahea Recopuerto	Wailuku, HI	2019-11-05
Aya Ahmad	Fort Collins, US	2019-11-04	Kyle Patterson	Astoria, US	2019-11-05
Lenita Begay	Chinle, US	2019-11-04	Angie Oliver	Keaau, US	2019-11-05
Ryan Scopin	Ewa Beach, HI	2019-11-04	Sydney Knudtson	Roseville, US	2019-11-05

Name	Location	Date	Name	Location	Date
Meghan George	Merchantville, US	2019-11-05	Alessio Guerini	Wayne, US	2019-11-06
Klaaina Wong	Kailua, HI	2019-11-05	Margot Easley	Stagecoach, US	2019-11-06
Johanna Garcia	Elsa, TX	2019-11-05	Cody White	Oklahoma City, US	2019-11-06
Nicole Heaslip	Suwanee, US	2019-11-05	Richard Dawson	Hearne, US	2019-11-06
Jessica Little	Seattle, US	2019-11-05	Manashe Badalov	Forest Hills, US	2019-11-06
Pauline White	Monroeville, US	2019-11-05	catherina pratt	Kaneohe, HI	2019-11-06
Colleen Blackburn	Salt Lake City, US	2019-11-05	Lowell Terada	Kaneohe, HI	2019-11-06
Carol Brede	Kaneohe, HI	2019-11-05	Katherine Bird	Kaneohe, US	2019-11-06
Michele LaPorte	Hoffman Estates, US	2019-11-05	Margaret Gammon	Kaneohe, HI	2019-11-06
Fiona Kely	New York, US	2019-11-05	Jaymon Cleary	Pahrump, NV	2019-11-06
Robert Klemm	Houston, US	2019-11-06	Maile Hussey	Honolulu, HI	2019-11-06
Maria Balicka	Kenmore, US	2019-11-06	Cheri Comparan	Ewa Beach, US	2019-11-06
Jessica Meece	Arden, US	2019-11-06	Randall Kimura	Honolulu, HI	2019-11-06
Brianna Slavik	Manchester, US	2019-11-06	Katherine Garcia	Kaneohe, HI	2019-11-06
Brianna Goodwin	Cape May Court House, NJ	2019-11-06	Karen Lopez	Honolulu, HI	2019-11-06
Ruth Hirai	Kaneohe, HI	2019-11-06	Leliani Rivera	Honolulu, HI	2019-11-06
Puanani Akaka	Kaneohe, HI	2019-11-06	Carolyn Nakamura	Kaneohe, HI	2019-11-06
Cara Bernales	Las Vegas, NV	2019-11-06	Melia Hussey	Honolulu, HI	2019-11-06
Joseph Kaniaupio	Holualoa, US	2019-11-06	Joy Chinen	Kaneohe, HI	2019-11-06
Ryan Williams	Heber City, US	2019-11-06	haychell castil	Miami, US	2019-11-06
William Akaka	Kaneohe, HI	2019-11-06	Doreen Au	Honolulu, HI	2019-11-06
Cheyane Benge	Shallotte, US	2019-11-06	Dale Stevens	Honolulu, HI	2019-11-06

Name	Location	Date	Name	Location	Date
Tatiana Quinones	Culver City, US	2019-11-06	Sandra You	Honolulu, HI	2019-11-07
Shanda DeCosta	Kailua, HI	2019-11-06	Leanne Hachey	Kaneohe, HI	2019-11-07
Imelda Girangaya	Honolulu, HI	2019-11-06	Sherrane Vargas	Honolulu, HI	2019-11-07
Sarina Law	Milliani, HI	2019-11-06	Dezalynn Tiell	Ewa Beach, HI	2019-11-07
Willi Coelho	Honolulu, HI	2019-11-06	Kathleen Hicks	Kaneohe, HI	2019-11-07
Makalapua Lua	Pearl City, US	2019-11-06	Jordan Lewis	Portland, OR	2019-11-07
Robert Kukahiko	Pearl City, HI	2019-11-06	Shanah Brody	Vancouver, WA	2019-11-07
Trisha Awa-Lee	Kaneohe, HI	2019-11-06	Bridget Tully	Honolulu, HI	2019-11-07
Jenn Bumanglag	Kailua, HI	2019-11-06	Sarah Machado	Kailua Kona, HI	2019-11-07
Olivia Azevedo	Orange, CA	2019-11-06	Andres Jacobs	Kailua, HI	2019-11-07
Kanani Kalahiki	Kailua, HI	2019-11-06	Julle Dean-Kramer	Honolulu, HI	2019-11-07
BARON LEE	Honolulu, HI	2019-11-06	Stephen Tam Loo	Honolulu, HI	2019-11-07
Jane Benito	Honolulu, HI	2019-11-06	Pono Hiram-Macdonald	Honolulu, HI	2019-11-07
Kahanu Zuttermeister	Waimanalo, HI	2019-11-06	Austin Coen	Pearl City, HI	2019-11-07
Joel Kanemori	Honolulu, HI	2019-11-06	Phillip H Wong	Kaneohe, HI	2019-11-07
Jeff Takamine	Pearl City, HI	2019-11-06	Lauren Chung	Honolulu, HI	2019-11-07
Nicole Flores	Honolulu, US	2019-11-06	Tina kepa	Waipahu, US	2019-11-07
Taisha Au	Kailua, HI	2019-11-06	Hannah Lange	Mount Horeb, WI	2019-11-07
Tyrone Heen	Honolulu, HI	2019-11-06	Jocelyn Bibian	Rome, US	2019-11-07
Pearly Uesato	Honolulu, HI	2019-11-06	Barbara Kuanaa	Kaneohe, HI	2019-11-07
Charis Logan	Honolulu, HI	2019-11-06	Brooks Shigemoto	Honolulu, HI	2019-11-07
Ka'iulani Lacy	Hilo, HI	2019-11-07	NATHANIEL SHAFFER	Morrisville, US	2019-11-07

Name	Location	Date
Beatrice Hirota	Mililani, HI	2019-11-07
Kaleb Smith	Grand Rapids, US	2019-11-07
Rochelle Miralles	Ewa Beach, HI	2019-11-07
Daniel Davids	Kaneohe, HI	2019-11-07
Marisol Garcia	Kailua, HI	2019-11-07
Robbey Meguro	Hilo, HI	2019-11-07
Patricia Derby	Kaneohe, HI	2019-11-07
Brenda Almendariz	Phoenix, HI	2019-11-07
Allison Sakae-Kauffman	Kaneohe, HI	2019-11-07
Caren Torres Otenbriet	Kaneohe, HI	2019-11-07
Alicia Garcia	Kailua, HI	2019-11-07
Rachelle Kamimoto	Honolulu, HI	2019-11-07
Lynn M	US	2019-11-07
Taylor Souza	Honolulu, HI	2019-11-07
Brad You	Rialto, CA	2019-11-07
Ken Schmidt	Kaneohe, HI	2019-11-07
Adam Williams	Kaneohe, HI	2019-11-07
Zachery Rajkovicz	Las Vegas, NV	2019-11-07
Angeline Smith	Kaneohe, HI	2019-11-07
Catherine Redd	Honolulu, HI	2019-11-07
Stacie Tullao	Aiea, HI	2019-11-07
Seline Basham	Ewa Beach, HI	2019-11-07

Name	Location	Date
Kim Brown	Kaneohe, HI	2019-11-07
Jennifer Aragon	Hialeah, US	2019-11-07
Nicholas Parisi	Hamburg, US	2019-11-07
Marl BROWN	Wisconsin Dells, US	2019-11-07
James Pantorilla	Aiea, HI	2019-11-07
Gracie Lang	Giddings, US	2019-11-07
Janice Araneta	Honolulu, HI	2019-11-07
Jenny Cruz	Oakland, CA	2019-11-07
Gregory You	Honolulu, HI	2019-11-07
Frank Napoleon	Lincoln City, OR	2019-11-07
Joanna Poldipala	Honolulu, HI	2019-11-07
Heather Izumi	Honolulu, HI	2019-11-07
Kayla Castle	Volcano, HI	2019-11-07
Leonardo Abella	Kailua, HI	2019-11-07
Sophie Gambier	Bellevue, US	2019-11-07
Cole Pearson	Tallahassee, US	2019-11-07
Pantorilla Takami	Mililani, HI	2019-11-07
Kristen Sauer	Houston, US	2019-11-07
Raghav Agrawal	Columbus, US	2019-11-07
Jill Tengan	Honolulu, HI	2019-11-07
Marron Gardner	Salt Lake City, US	2019-11-07
Erik Conn	Austin, US	2019-11-07

Name	Location	Date
Glenn Foss	Atlanta, GA	2019-11-07
Gail Dowson	Honolulu, HI	2019-11-07
Melissa Kono	Kaneohe, HI	2019-11-07
Malia Mansanas	Honolulu, HI	2019-11-07
Lexi Yi	Solon, US	2019-11-07
Jayna Cravens	Laie, US	2019-11-07
Maile Alcos	Honolulu, HI	2019-11-07
Briahni Atisanoe	Kaneohe, HI	2019-11-07
Keshia Mead	Charlotte, NC	2019-11-07
Jennifer Tsukiyama	Apo, AE	2019-11-07
Ivanae o.o	boise, US	2019-11-08
Charla You	San Antonio, TX	2019-11-08
Caroline Nascimento	Honolulu, HI	2019-11-08
Nathan Yuen	Ewa Beach, HI	2019-11-08
Sandra Fujita	Los Angeles, CA	2019-11-08
Michelle Zapata Berrios	Honolulu, HI	2019-11-08
Randi-lee Rezents	Kaneohe, HI	2019-11-08
Kara Kelai	Honolulu, HI	2019-11-08
Mayleen Lau	Kaneohe, HI	2019-11-08
Bonnie Kahapea-Tanner	Kaneohe, HI	2019-11-08
Nickolette Avilla-Ilysey	Honolulu, HI	2019-11-08
Ahmed Ahmed	Fort Lauderdale, US	2019-11-08

Name	Location	Date
Elle Byrne	Boise, US	2019-11-08
Rene Pagaoa	Kaneohe, HI	2019-11-08
Eugene Brede	Kailua, HI	2019-11-08
Brea Adams	Santa Rosa, US	2019-11-08
Liz Goodhue	US	2019-11-08
Liana Ninomoto	Pearl City, HI	2019-11-08
Tatiana Villarreal	Merced, US	2019-11-08
Amy Olds	Kaneohe, HI	2019-11-08
Ryan Smith	Smithfield, ME	2019-11-08
Allina Helm	San Diego, CA	2019-11-08
Trisha Nomura	Kaneohe, HI	2019-11-08
Rebekah Lee	Honolulu, HI	2019-11-08
Amy Tesoro	Kaneohe, HI	2019-11-08
Danielle Battisti	Seale, AL	2019-11-08
JAYMEE KELTY	Peoria, AZ	2019-11-08
John O'leary	Marshfield, US	2019-11-08
BJ Malina	Kaneohe, HI	2019-11-08
Ryan Butler	Peoria, US	2019-11-08
Lindsey Malcolm	Piscataway, US	2019-11-08
Roxi Iijima	Honolulu, HI	2019-11-08
Kannan Ransdell	Chillicothe, US	2019-11-08
Frank Santos	Sacramento, US	2019-11-08

Name	Location	Date	Name	Location	Date
Natividad Rodríguez	San Juan, PR	2019-11-08	Lacie Guler	Honolulu, HI	2019-11-09
Mason Maddrn	Pearland, US	2019-11-08	Huseyin Guler	Kaneohe, HI	2019-11-09
Mike Montgomery	Kaneohe, HI	2019-11-09	Christopher Williams	Sanford, NC	2019-11-09
Justine Haltom	Kaneohe, HI	2019-11-09	Marcus Thompson	Atlanta, US	2019-11-09
Kaohi Kurosu	Kaneohe, HI	2019-11-09	Holland McCandless	Ocean Springs, US	2019-11-09
KIMBERLY Kaneda	Honolulu, HI	2019-11-09	sam j	XOX, US	2019-11-09
Janice Burnside	Honolulu, HI	2019-11-09	Tony Ma	New York, US	2019-11-10
Roberto Sanchez	Boynton Beach, US	2019-11-09	Jessamyn da Cunha	San Rafael, CA	2019-11-10
Troy Maeda	Millilani, HI	2019-11-09	brian beverly	US	2019-11-10
Kimber Balmilero	Honolulu, HI	2019-11-09	Pandora Farrer	South Gate, US	2019-11-10
Angela Simonson	Washington, US	2019-11-09	Dianna Marinas	Kaneohe, HI	2019-11-10
Kuulei Kauano	Lacey, WA	2019-11-09	Daniel Harris	ball ground, GA	2019-11-10
Chante Inamasu	Kaneohe, HI	2019-11-09	Laura Lee	Honolulu, HI	2019-11-10
Jordan Inamasu	Kaneohe, HI	2019-11-09	Joel Symons	Douglas., US	2019-11-10
Lana Pitzenberger	Rochester, WA	2019-11-09	Fern Wei	Kaneohe, HI	2019-11-10
Ben Robinson	Honolulu, HI	2019-11-09	Cindy Chaney	Port Charlotte, US	2019-11-10
Amanda Kaahanui	Kaneohe, HI	2019-11-09	Mallani Maka'ina'i	Atlanta, GA	2019-11-10
Diane Evans	Honolulu, HI	2019-11-09	Mike Nakata	Kaneohe, HI	2019-11-10
Alicia Farrell	Steinhatchee, US	2019-11-09	Jennifer Souza	Kaneohe, HI	2019-11-10
Roxanne Murillo	Milwaukee, US	2019-11-09	Tiana Dole	Honolulu, HI	2019-11-10
Cynthia Clarke	Ocala, US	2019-11-09	Regina Browne	Kansas City, US	2019-11-10
Gabi S	Tenafly, US	2019-11-09	Cadence Sulley	Kingston, US	2019-11-10

Name	Location	Date	Name	Location	Date
Denise Hirano	Henderson, NV	2019-11-10	Randy Gonc	Kaneohe, HI	2019-11-12
Angelina Bowne	US	2019-11-10	Meghan Akim	Honolulu, HI	2019-11-12
Marjorie Homstol	Plymouth, US	2019-11-11	Chasity Ah You	Kaneohe, HI	2019-11-12
Aaron Durling	Palm Coast, US	2019-11-11	Nola Chanthakham	Kaneohe, HI	2019-11-12
Demond Smith	Atlanta, US	2019-11-11	Cathy Carr	Makawao, HI	2019-11-13
Patrice Wallace	Santa Cruz, CA	2019-11-11	Cathy carr	Kaneohe, HI	2019-11-13
Erica Pescht	Kaneohe, HI	2019-11-11	Keonaona Sallis	Waimanalo, HI	2019-11-13
Cody Matsuda	Kaneohe, US	2019-11-11	Robert Lowe	Honolulu, HI	2019-11-13
Dominick Davis	Savannah, US	2019-11-11	Raine Reavis	Honolulu, HI	2019-11-13
S Helms	Lakewood, US	2019-11-11	Aya Ikeda	Honolulu, HI	2019-11-13
Viviane Simoes	Secaucus, US	2019-11-11	Shelby Perez	Ewa Beach, HI	2019-11-14
Elias Rutledge	Stockton, US	2019-11-11	Shania Amodo	Kapolei, HI	2019-11-14
Jessica Choi	Mobile, US	2019-11-11	Lyla Gonsalves	Honolulu, HI	2019-11-14
Erin Ahn	Lexington, US	2019-11-11	Kaj Pastor	Honolulu, HI	2019-11-14
Jordan Jimenez	Salt Lake City, US	2019-11-11	Fernanda Guajardo	Apodaca, Mexico	2019-11-14
Fred Blackwell	Glendale, US	2019-11-11	Bob Dylan	Honolulu, HI	2019-11-14
Rich Robinson	Englewood, CO	2019-11-11	Sierra Choi	Kailua, HI	2019-11-14
Eddie Clarke	Plano, US	2019-11-11	kaori reavis	Honolulu, HI	2019-11-14
Holly Sevier	Kaneohe, HI	2019-11-11	Nani Carson	Salt Lake City, UT	2019-11-14
Malia Brinkley	Kaneohe, HI	2019-11-12	Izzy poepoe	Honolulu, HI	2019-11-14
Naomi Tachera	Walmea, HI	2019-11-12	Kaleb Hardwick	Honolulu, HI	2019-11-14
Ryan Adric	Millilani, HI	2019-11-12	Janelle Kama	Honolulu, HI	2019-11-14

Name	Location	Date
Jadine Wong	Kaneohe, HI	2019-11-14
Ryana Terao	Ashland, OR	2019-11-14
William Remular	Aiea, HI	2019-11-14
Kelsey Floyd	Federal Way, WA	2019-11-14
Mahie Kila	Honolulu, HI	2019-11-14
Daniel Amodo	Kapolei, HI	2019-11-14
Lauryn Davis	Ephraim, UT	2019-11-14
Ethan won	Honolulu, HI	2019-11-14
Donald Reavis	Honolulu, HI	2019-11-14
Barbara Rocha	Honolulu, HI	2019-11-14
Riley Reavis	honolulu, HI	2019-11-14
Yeety Bol	Honolulu, HI	2019-11-14
Chyla Alberto	Seattle, WA	2019-11-14
Nancy Jones	Wailanae, HI	2019-11-16
shala mckee	Seattle, WA	2019-11-17
Jullanne McCreedy	Kaneohe, HI	2019-11-17
Sandra Linskey	Kaneohe, HI	2019-11-17
Sheila Cyboron	Kailua, HI	2019-11-17
June Inay-Bungcayao	Ewa Beach, HI	2019-11-17
Gailly Siddayao	Kaneohe, HI	2019-11-17
Debra Stephenson	Kailua, HI	2019-11-17
Erin Henderson	Waipahu, HI	2019-11-18

Name	Location	Date
Jessica Ho	Honolulu, HI	2019-11-18
Kathy Mras	Anaheim, CA	2019-11-18
Lauren Somera	Kapolei, HI	2019-11-18
Iris Nakamatsu	Kaneohe, HI	2019-11-18
Alejandro Rodriguez	San Juan, US	2019-11-19
Michael Torres	Westlaco, US	2019-11-19
Natalie Adamson	Cincinnati, US	2019-11-19
Cheryl McIlroy	Kailua, HI	2019-11-19
Diane Harding	Kailua, HI	2019-11-19
Lani-Kailua Outdoor Circle LKOC	Kailua, HI	2019-11-19
Kathleen Bryan	Kailua, HI	2019-11-19
Claudia Webster	Kailua, HI	2019-11-19
Lori Lloyd	Kaneohe, HI	2019-11-19
mark steiner	Honolulu, HI	2019-11-19
Dorothy Wangchuk	Kailua, HI	2019-11-19
William Leary	Kaneohe, HI	2019-11-19
Gretchen Gould	Kaneohe, HI	2019-11-19
Zenaida Nueves	Worcester, US	2019-11-19
Margaret L. Brezel Brezel	Kailua, HI	2019-11-20
Jackie Wah	Honolulu, HI	2019-11-20
Kim Tckder	Kaneohe, HI	2019-11-20

Name	Location	Date
Marcia Kemble	Honolulu, HI	2019-11-20
Mary Dizon	Honolulu, HI	2019-11-20
Julie Rogers	Kailua, HI	2019-11-20
Lyn Turner	Kailua, HI	2019-11-20
Lucia Kye	Honolulu, HI	2019-11-20
Kei Volpe	Dudley, US	2019-11-20
Alma Estrada	Stafford, US	2019-11-20
Jackson Dahlquist	Portland, US	2019-11-20
Riley Azizeh	Bastrop, US	2019-11-20
Tim Moon	Ammon, US	2019-11-20
Thomas Kim	Los Angeles, US	2019-11-20
Estefani Montero	Dallas, US	2019-11-20
Kyndol Clark	Morristown, US	2019-11-20
KEONTE Brown	Portsmouth, US	2019-11-20
Kathy Shimata	Honolulu, HI	2019-11-20
Maile McLaughlin	Kailua, HI	2019-11-20
David Welker	Benson, US	2019-11-20
Ezequiel Herrera	Fontana, US	2019-11-20
Amari Deanes	Mount Pleasant, US	2019-11-20
Mari McCalg	Los Angeles, Aland Islands	2019-11-20
William Rodenhurst	Kaneohe, HI	2019-11-20
Kelly Shereck	Marengo, US	2019-11-20

Name	Location	Date
Lacey Briggs	Bellevue, US	2019-11-20
Kaylah McKinney	Spring lake, US	2019-11-20
william soto	san sebastian, US	2019-11-20
Paul Sullivan	Malden, US	2019-11-20
Raj Patel	Watertown, US	2019-11-20
Ambar Zayas	Charlotte, US	2019-11-20
Percy Roberts	Houston, US	2019-11-20
Sara Reed	Orlando, US	2019-11-20
CJ Hancock	Hyattsville, US	2019-11-20
Jannette Hernandez	San Juan, US	2019-11-20
Susan R Baldwin	Clyde Hill, WA	2019-11-20
Mallory Cooper	Evanston, US	2019-11-20
Maddie Belknap	Columbus, US	2019-11-20
Charlotte Easley	Durham, US	2019-11-20
vidyalankar sukdeo	New York, US	2019-11-20
Alexandra Avery	Kailua, HI	2019-11-20
David Karroil	East Meadow, US	2019-11-20
Steven Babel	Angier, US	2019-11-20
Ligija Rodunas	Nyack, US	2019-11-20
Abigail Devine	Tampa, US	2019-11-20
Brian Bagnall	Honolulu, HI	2019-11-20
Christy Alexy	Pico Rivera, CA	2019-11-20

Name	Location	Date
Jorden Vereker	Ogden, US	2019-11-21
Brady Misner	sunset, US	2019-11-21
Merrick Bello	Elmhurst, US	2019-11-21
Christine Faraci	Scottsdale, US	2019-11-21
Xavier Seymour	Waterbury, US	2019-11-21
Christina Harvey	Hughestown, US	2019-11-21
Magic Puppy	Latrobe, US	2019-11-21
Ethan Miles	Whittier, US	2019-11-21
Sandraa West	Hardand, US	2019-11-21
Joyce Galloway	Wyoming, MI	2019-11-21
Michael Souchak	US	2019-11-21
Kyla Rhoads	Fishers, US	2019-11-21
Shalone Swanson	Akron, US	2019-11-21
Joyce Baker	Forest, US	2019-11-21
A K	Desoto, US	2019-11-21
David Rizo	Kingsport, US	2019-11-21
Daniel Roldan	Milwaukee, US	2019-11-21
Jannelle Koszarek	woodlyn, US	2019-11-21
Nathaniel Turner	Chapel Hill, US	2019-11-21
Rheleah Hungria	Chino, US	2019-11-21
Summer Mraz	Gardena, US	2019-11-21
Bryan Reed	Puyallup, US	2019-11-21

Name	Location	Date
Lexie Couch	Muncie, US	2019-11-21
marie mangrum	fairview, US	2019-11-21
Lauren Lindberg	US	2019-11-21
Brayden Koehler	San Antonio, US	2019-11-21
Carlos Narvaez	Bayamon, US	2019-11-21
Kevin Pegler	Mactaquac, Canada	2019-11-21
Evan Childress	Charlotte, US	2019-11-21
Samantha Volz	West Milton, US	2019-11-21
Lilley Bovard	Georgetown, US	2019-11-21
Stephen Crook	Minneapolis, US	2019-11-21
Callie Spears	Tulsa, US	2019-11-21
Madison Yates	Evansville, US	2019-11-21
Carol Arnold	Forest Hills, US	2019-11-21
Michelle Harbulak	Minneapolis, US	2019-11-21
Tammy Fairchild	LUBEC, US	2019-11-21
Jimmy Wagoner	Randeman, US	2019-11-21
Kevin Holtz	Reno, US	2019-11-21
seirlen vega	miami, US	2019-11-21
Kalesha Hazekton	Saint Petersburg, US	2019-11-21
Sara Cady	Hayes, US	2019-11-21
Ben Mayfield	Prosper, US	2019-11-21
Mo Noras	Los Angeles, US	2019-11-21

Name	Location	Date
Earl White	Atlanta, US	2019-11-21
Patti Cressman	US	2019-11-21
Jo Brown	Portland, US	2019-11-21
Cameron Shadbolt	Toledo, US	2019-11-21
Annabel Marks	Metrose, US	2019-11-21
Flora Lowley	Dickson, US	2019-11-21
adrian martinez	Sacramento, US	2019-11-21
Laura Williams	Lansing, US	2019-11-21
Zoe Williams	Chillicothe, US	2019-11-21
Ycker Cruz	Buford, US	2019-11-21
Glenna Pray	Carlsbad, US	2019-11-21
Marco Diaz-Frances	Moorestown, US	2019-11-21
Heidi Wackrow	Glen Ellyn, US	2019-11-21
Abigail Lancette	Chippewa Falls, US	2019-11-21
Larry Seth Steinberg	Mililani, HI	2019-11-21
Araeli Ramirez-Reyna	Labelle, US	2019-11-21
Zoe Daniel	Springfield, US	2019-11-21
Justin Loepp	Clinton Twp, US	2019-11-21
Aiko Motohara	Ann Arbor, US	2019-11-21
Anony Mous	Pasadena, US	2019-11-21
fart face	Groveland, US	2019-11-21
Frank Miller	Fair Play, US	2019-11-21

Name	Location	Date
Danielle Smiljanich	Doniphan, US	2019-11-21
Naila Soares	Dorchester, US	2019-11-21
Tomas Escobar	Zolfo Springs, US	2019-11-22
Wolfe exe	Sylmar, US	2019-11-22
Fatima Lara	Austin, US	2019-11-22
Diego Hernandez	Mesa, US	2019-11-22
Belle Pellano	Hoffman Estates, US	2019-11-22
Jenessy Velasquez	Inglewood, US	2019-11-22
David Woo	Whitestone, US	2019-11-22
Ollie Rabin - Marquez	Acton, US	2019-11-22
jael porras	Hawthorne, US	2019-11-22
Gerona Williams	Columbus, US	2019-11-22
Allen Massey	Atlanta, US	2019-11-22
Bill Aldona II	Walanse, US	2019-11-22
Erin Trigg	Memphis, US	2019-11-22
Dave Addleman	Illinois	2019-11-22
Julian Centeno	Chicago, US	2019-11-22
bruce langlois	highlands ranch, US	2019-11-22
Chris Scholl	Neptune, NJ	2019-11-22
Keng-I Lin	Kailua, HI	2019-11-22
Carolyn Riederer Annerud	Honolulu, HI	2019-11-22
Mayra Heredia	Chicago, US	2019-11-22

Name	Location	Date	Name	Location	Date
Morgan Wilmes	Sumter, US	2019-11-22	Amy Harlib	New York, US	2019-11-22
Zachary Seybert	Slick, US	2019-11-22	M Corenevsky	Kaneohe, HI	2019-11-22
Robert Morita	Pearl City, HI	2019-11-22	Ka'ohu Cazinha	Kaneohe, HI	2019-11-22
Paula Ress	Kailua, HI	2019-11-22	mary valenti	Honolulu, HI	2019-11-22
Kaitlyn Johnson	Menlo Park, CA	2019-11-22	Lori Bonin	Buffalo, MN	2019-11-22
Regina Yoshimori	Kaneohe, HI	2019-11-22	Owen Lewis	Senatobia, US	2019-11-22
Cory Dejesus	Ewa Beach, HI	2019-11-22	Jared Luke	Kaneohe, HI	2019-11-22
Colleen Yee	Kaneohe, HI	2019-11-22	Gloradine Gause	Pleasantville, US	2019-11-22
Camille Rodrigues	Las Vegas, NV	2019-11-22	Brittany Bardsley-Marcial	Kaneohe, HI	2019-11-22
Jaylynn Luther	Fairfield, US	2019-11-22	Margie Klessling	Kaneohe, HI	2019-11-22
nathalie dierickx	Los Angeles, US	2019-11-22	Gabrielle Balacua	Ashland, OR	2019-11-22
Ohnumomo? Yt	Voorhees, US	2019-11-22	Ivan Agostini	US	2019-11-22
Holly Hulme	Chappaqua, US	2019-11-22	Lee Moses	Cibola, US	2019-11-22
Caitlin Yoshimori	Kaneohe, HI	2019-11-22	Kloe Nelson	Aurora, CO	2019-11-22
Katie Jin	Warren, NJ	2019-11-22	Olivia Johnson	Greeley, CO	2019-11-22
Maddie Varble	Saint Louis, MO	2019-11-22	Cyana Marie Andres-Paguirigan	Honolulu, HI	2019-11-22
David Gover	Walnut Creek, CA	2019-11-22	Kassidy Pinder	Tuskegee Institute, US	2019-11-22
Phil Tourangeau	Kailua, HI	2019-11-22	Nathan Shreffler	Seaman, US	2019-11-22
Alejandro Tova	Denver, CO	2019-11-22	Becky Dodini	Kaneohe, HI	2019-11-22
Madeline McKinnon	Fort Collins, CO	2019-11-22	Nelson Koga	Chicago, IL	2019-11-22
Gregory Rogers	Brookline, MA	2019-11-22	Laurence Omura	Honolulu, HI	2019-11-22
Tristan Ilce	Vancouver, WA	2019-11-22			

Name	Location	Date	Name	Location	Date
Asmerom Ghileu	Sacramento, US	2019-11-22	Bianca Rodriguez	Greeley, CO	2019-11-22
Carson Lommers	Corvallis, US	2019-11-22	Bianca Santiago	Norfolk, US	2019-11-22
Chantel Aril	Kaneohe, HI	2019-11-22	Steve Machler	Kaneohe, HI	2019-11-22
Jordan roy	Denver, CO	2019-11-22	Aaron Ishiki	Kaneohe, HI	2019-11-22
B E	Moro, US	2019-11-22	Taylor Gabatino	Honolulu, HI	2019-11-22
Avery Andrepont	Monroeville, US	2019-11-22	Cavin Kau	Honolulu, HI	2019-11-22
Kaelan Mulroy	Denver, CO	2019-11-22	Tanya Lehua Buckenberger	Kaneohe, HI	2019-11-22
Tara Stauffer	Salt Lake City, UT	2019-11-22	Michelle Chang	Kihei, HI	2019-11-22
Wendy Schloss	Fort Collins, CO	2019-11-22	Ivan Gaona	Fort Worth, TX	2019-11-22
Kyleigh Takahashi	San Francisco, CA	2019-11-22	Phoenix Lambrecht	Waipahu, HI	2019-11-22
Sean Dibartolomeo	Kaneohe, HI	2019-11-22	Robyn Harvest	Halewa, HI	2019-11-22
Eva-Lani High	San Diego, CA	2019-11-22	Lauren Jacobs	El Cerrito, CA	2019-11-22
Ethan Mann	Kaneohe, HI	2019-11-22	Sophia Sweetser	Chambersburg, US	2019-11-22
Chelsea Maeda	Portland, OR	2019-11-22	Gabrielle Matter	Millersburg, US	2019-11-22
Destiny Marrero	Orange, CA	2019-11-22	andrew derstine	Louisville, US	2019-11-22
Cesar Deltoro	Fort Campbell, KY	2019-11-22	Jayma-Dee Suesue	Walanae, HI	2019-11-22
Dantia Rios	Fort Campbell, KY	2019-11-22	Alexander Hernandez	Hawthorne, US	2019-11-22
Ryan Kamealoha jr	Kaneohe, HI	2019-11-22	Savannah Baus	US	2019-11-22
Rhibecca Martin	Ewa Beach, HI	2019-11-22	Maggie Zhang	Saint Louis, MO	2019-11-22
Mali Holt	Barksdale AFB, LA	2019-11-22	Jacob Gover	Loveland, CO	2019-11-23
Cody Le Clere	Kaneohe, HI	2019-11-22	Jenna Caballero	Kaneohe, HI	2019-11-23
Madison Marcel	Mobile, AL	2019-11-22	Tileree Johnson	Kaneohe, HI	2019-11-23

Name	Location	Date	Name	Location	Date
Ayla Lum	Honolulu, HI	2019-11-23	Chrystil Roberts	Lubbock, US	2019-11-23
Keya Gore	Lilburn, GA	2019-11-23	Kelsea Menard	Hopkinsville, KY	2019-11-23
Dylon Cullen	Kaneohe, HI	2019-11-23	Daniel N.	Agoura Hills, US	2019-11-23
Daniel Forman	Millilani, HI	2019-11-23	Angel Han	Denver, CO	2019-11-23
Nanjelys Thomas	Clarksville, TN	2019-11-23	Toni Wock	Polson, MT	2019-11-23
Tee Robinson	Fort Campbell, KY	2019-11-23	Alexis Chong Tim	Kaneohe, HI	2019-11-23
Shacarrle Abney	Atlanta, GA	2019-11-23	Jarid Candeeas	Nashua, NH	2019-11-23
Harmony Daral	Clarksville, TN	2019-11-23	Michelle Stevens	Asan, South Korea	2019-11-23
Ruel Ganitano	Aiea, HI	2019-11-23	Jhonatan Soto	Orange, CA	2019-11-23
Aaliyah Blakeney	Spring City, TN	2019-11-23	Marcus Pulido	El Paso, TX	2019-11-23
Jr Deltoro	Fort Campbell, KY	2019-11-23	Lena Girdy	Lubbock, US	2019-11-23
Jasmine Culpepper	Nashville, TN	2019-11-23	Zachary Films	Bronx, US	2019-11-23
Maureen Kelley	Cheyenne, US	2019-11-23	Sharrell Pegeas	Oak Grove, KY	2019-11-23
Nidia Martinez	US	2019-11-23	John Milter	Denver, CO	2019-11-23
dylan L.	Santa Ana, US	2019-11-23	Meleana Adams	Hilo, HI	2019-11-23
Amy & Richard Motooka	Kaneohe, HI	2019-11-23	Jalmelyn Buenaventura	Honolulu, US	2019-11-23
Tishon Sanchez-Clay	Hopkinsville, KY	2019-11-23	Milena Hernandez	Orange, CA	2019-11-23
Betty Osl	Plano, US	2019-11-23	Jane Jaxon	Wailua, HI	2019-11-23
Cristina GarciaHidalgo	Miami, US	2019-11-23	Susan Crabtree	Tucker, US	2019-11-23
Christal Amado-saranillio	Honolulu, HI	2019-11-23	Courtney Comilla	Bend, OR	2019-11-23
Dez Ancheta	Honolulu, HI	2019-11-23	Allison Hara	Kaneohe, HI	2019-11-23
Jasmine Chester	Fort Riley, KS	2019-11-23	Wyatt Mock	Kaneohe, HI	2019-11-23

Name	Location	Date	Name	Location	Date
Ieanne Iukela	Kailua, HI	2019-11-23	Alyssa Silva	Chicago, US	2019-11-23
Jordan Kapellela	Kaneohe, HI	2019-11-23	Scotty Boul	Vernon Rockville, US	2019-11-23
Meghan Mahoney	Jersey City, US	2019-11-23	Audrey Beckett	Chevy Chase, US	2019-11-23
Azadeh_fard@yahoo.com Fard	Canfield, US	2019-11-23	Kyle Seaver	Leroy, NY	2019-11-23
Elijah Fiorucci	New York, US	2019-11-23	Justin Gomez	San Angelo, US	2019-11-23
Mary O'Brien	Kaneohe, HI	2019-11-23	Selah Campbell	Madison, US	2019-11-23
Lisa Dias	Kaneohe, HI	2019-11-23	Christine McCray	Annapolis, US	2019-11-23
rob conti	Tom's River, US	2019-11-23	Drew Henderson	Cleveland, US	2019-11-23
Kemmara Sealy	Seattle, WA	2019-11-23	Samantha Preis	Kaneohe, HI	2019-11-23
Grace Kapesi	Pearl City, HI	2019-11-23	Dan Furuya	Kaneohe, HI	2019-11-23
Justin Warren	Lawton, OK	2019-11-23	Mario Garda	US	2019-11-23
Charles Moss	Fort Campbell, KY	2019-11-23	Dmetris Owens	Orlando, US	2019-11-23
Spencer Saito	Honolulu, US	2019-11-23	Courtney Fujihara	Kaneohe, HI	2019-11-23
Misty Makahilahila	Kailua, US	2019-11-23	Vaughn McCallum	Honolulu, HI	2019-11-23
Michael Jacome	Grants Pass, OR	2019-11-23	Nameless Anims	Greensboro, US	2019-11-23
Napua Lua	Honolulu, HI	2019-11-23	Camryn Kunioka	Wailuku, HI	2019-11-23
Freddy Rodriguez	Dallas, US	2019-11-23	Qiana Green-Lucas	Kaneohe, US	2019-11-23
Lawrence Ory	Pittsburgh, US	2019-11-23	Gayle Machida-tsono	Kapolei, HI	2019-11-23
Christopher Morgan	Indianapolis, IN	2019-11-23	HawaiiLoa Durante	Pomona, CA	2019-11-23
Austin Cuttino	Tucson, US	2019-11-23	Molly Pietarinen	Macedon, US	2019-11-23
Elizabeth Arellano	Clarksville, TN	2019-11-23	Alex Colben	Cullman, US	2019-11-23
Sara Upton	Phoenix, AZ	2019-11-23	Hhhhtvv Ghhbtv	Louisville, US	2019-11-23

Name	Location	Date	Name	Location	Date
Mary Lou Davis	Kailua, HI	2019-11-23	David Isaacs	East Lansing, US	2019-11-24
Pamela Sanchez	Kaneohe, HI	2019-11-24	mike home	Elkton, US	2019-11-24
Shelby Maualeivao	Kaneohe, HI	2019-11-24	Tahandra Honoré	Fort Campbell, KY	2019-11-24
Christa Joy Nabong	Honolulu, HI	2019-11-24	JOSEPH scarcella	Miami, US	2019-11-24
Quela Puaauli-Puahi	Las Vegas, NV	2019-11-24	James Parham	Denver, US	2019-11-24
Kailani Gagne	Tampa, FL	2019-11-24	Keith Brennan	Phoenixville, US	2019-11-24
William Law	Colliers, US	2019-11-24	Kuzma Ryabov	Los Angeles, US	2019-11-24
I NoLikeRuff	Mount Vernon, US	2019-11-24	William Kipersztok	Gainesville, US	2019-11-24
Tamika Harris	Philadelphia, PA	2019-11-24	Austin Dye	Salt Lake City, US	2019-11-24
Justin Larson	Chicago, IL	2019-11-24	Ericka Sauerland	Kailua, HI	2019-11-24
Kysa Womack	Richmond, US	2019-11-24	peter swenson	Kaneohe, HI	2019-11-24
Alexander Stefiniw	Newark, US	2019-11-24	kadeN stlth	Palatka, US	2019-11-24
Paul Isono	Ewa Beach, HI	2019-11-24	Emmanuel Gonzales	Kaneohe, HI	2019-11-24
Bill Pham	Temecula, US	2019-11-24	Madison Harmon	US	2019-11-24
Isalah Damasco	Sparks, NV	2019-11-24	Michael Weinstein	Naples, US	2019-11-24
RICHARD RHODE	Kailua, HI	2019-11-24	Kingston McCray	Cincinnati, US	2019-11-24
Precious Kamakeeaina	Honolulu, HI	2019-11-24	dylan poxson	West Bloomfield, US	2019-11-24
Raegina Hawelu	Kaneohe, HI	2019-11-24	Kiera Usagawa	Portland, OR	2019-11-24
Tasha Santos	Kaneohe, HI	2019-11-24	Seth Miles	Evansville, US	2019-11-25
Emily Allen	Jacksonville, US	2019-11-24	Tetiana Kernitska	Stamford, US	2019-11-25
Cody Dean	Daytona Beach, US	2019-11-24	Wiktorja Nowak	Providence, US	2019-11-25
Aspen Topaz	Georgetown, US	2019-11-24	Bernadine Love	Sacramento, US	2019-11-25

Name	Location	Date	Name	Location	Date
nancy perry	Kailua, HI	2019-11-25	Ramona Okimoto	Lale, HI	2019-11-25
t y	Guthrie, US	2019-11-25	Casey Villarmia	Hawaii	2019-11-25
Riley Sellers	Seattle, US	2019-11-25	Caroline George	Pico Rivera, CA	2019-11-25
Cedar Wilson	Laie, US	2019-11-25	Kevin Tacderan	Haleiwa, HI	2019-11-25
Charles Phillips	Lahaina, HI	2019-11-25	Rebecca Kamakawiwoole	Kaneohe, HI	2019-11-25
Ihlanani Lasconia	Honolulu, HI	2019-11-25	Daya Akina	Kaneohe, HI	2019-11-25
Creepers? Aww man	Minneapolis, US	2019-11-25	ALVIN CHUNG	Kaneohe, HI	2019-11-25
Drew German	Minneapolis, US	2019-11-25	Lori Emery	St. Thomas, US	2019-11-25
Corene Peltier	Kaneohe, HI	2019-11-25	Amber Carson	Mesa, AZ	2019-11-25
Dawn Fraser	Honolulu, HI	2019-11-25	Clyde Andrew	Portland, OR	2019-11-25
Mary-Lou Edwards	Lantzville, Canada	2019-11-25	Marice Pineda	Ontario, CA	2019-11-25
April Phillips	Lahaina, HI	2019-11-25	Randall Al-Carrington	Rancho Cucamonga, CA	2019-11-25
Numela Makinano	Wailanae, HI	2019-11-25	Elisa Hauschel	Kapolei, HI	2019-11-25
Pedro Maynes	Honolulu, HI	2019-11-25	Rob Taylor	Orlando, US	2019-11-25
Kahkashan Naaz	Las Vegas, US	2019-11-25	Erik Kiheikapuaolaokalani Smith	Kaneohe, US	2019-11-25
Haunani Tanoi	Wailanae, HI	2019-11-25	Iexi fae	Gardner, US	2019-11-25
Brenda Watene	Haleiwa, HI	2019-11-25	John Gibbs	Honolulu, HI	2019-11-25
Michelle Darnitio	Kaneohe, HI	2019-11-25	Bree Watanabe	Nuuuanu, HI	2019-11-25
Corinna Gray	Kaneohe, HI	2019-11-25	Linda von Geldern	Portland, OR	2019-11-25
Frederick Kilbey	Hauula, HI	2019-11-25	Star Pai	Hilo, HI	2019-11-25
Marileess Sagaysay	Honolulu, HI	2019-11-25	AJ Jaeger	Kailua, HI	2019-11-25
Angel Lemus	Kaneohe, HI	2019-11-25			

Name	Location	Date	Name	Location	Date
Amalia Abrojena	Ukiah, CA	2019-11-25	Matthew Edwards	Sturgis, US	2019-11-25
Aileen Murakami	Honolulu, HI	2019-11-25	Kathleen Barfield	US	2019-11-25
Andrew Higa	Kaneohe, HI	2019-11-25	Amanda Rouse	Oakhill, US	2019-11-25
Terry Gerber	Kaneohe, HI	2019-11-25	Sharda Hawkins	Harrisburg, US	2019-11-25
Alexis Shaner	Kaneohe, US	2019-11-25	Alena Filina	Canton, US	2019-11-25
Harmony Abelaye	Kaneohe, HI	2019-11-25	Tania Miller	Cranberry Twp, US	2019-11-25
Mary-Ann Dorsey	Milliani, HI	2019-11-25	Joanne Farmer	Kailua, HI	2019-11-25
Yvonne Kahikina	Keaau, HI	2019-11-25	Corinne Yamashiro	Kaneohe, HI	2019-11-25
Allene Auld	Kaneohe, HI	2019-11-25	Alisha Pettigrew	Fort Campbell, KY	2019-11-25
Sydney Wicklund	Kaneohe, HI	2019-11-25	Elisabeth Vettori	Gualala, CA	2019-11-25
Colton Hatcher	Oconomowoc, US	2019-11-25	David Hirashild	Kaneohe, HI	2019-11-25
Mariel Hernandez	Richmond, US	2019-11-25	Jessica Holth	Saint Peters, US	2019-11-25
Dezmond Soanes	Tallahassee, US	2019-11-25	Gail Takamori	Honolulu, HI	2019-11-25
Lizzie Gresham	New Orleans, US	2019-11-25	Pene Kaonohi	Laie, US	2019-11-25
Travis Gerber	Kaneohe, HI	2019-11-25	Ken Miyasato	Honolulu, HI	2019-11-25
James Rodrigues	Walanae, HI	2019-11-25	Angel Abbott	Chicago, IL	2019-11-25
Kamalani n La'akea Hamilton	Hilo, US	2019-11-25	Drew Bradley	Lakeland, FL	2019-11-25
Leinaala Young	Kailua, HI	2019-11-25	eamon gray	Kaneohe, HI	2019-11-25
Pauline Mac Neil	Kailua, HI	2019-11-25	Robin Cone-Murakami	Portland, OR	2019-11-25
PUAALAQALANI NIHAU	Kailua-Kona, HI	2019-11-25	Kahla Walker	Hauula, HI	2019-11-25
Likolehua Tangaro	Kaneohe, HI	2019-11-25	Sarah Albers	Las Vegas, US	2019-11-25
mggy mikichi	Kaneohe, HI	2019-11-25	Giovanni Vadino	Brookhaven, US	2019-11-25

Name	Location	Date	Name	Location	Date
Sofia Arnao	Miami, US	2019-11-25	Nicole Custodio	West Sacramento, CA	2019-11-26
Patricia Blair	Hawaii, AL	2019-11-25	Sharon Willeford	Keauhou, HI	2019-11-26
Zoe Toedter	Morris, US	2019-11-25	Van Ness Kololeke	Cloverdale, CA	2019-11-26
Twalani Christian	Brier, WA	2019-11-25	Michelle Cabalse	Wahilawa, HI	2019-11-26
Julia Garcia	South Houston, US	2019-11-25	Roxanne Lyfe	Las Vegas, NV	2019-11-26
Ruby Folsom	N/A, US	2019-11-25	Keke Manera	Pearl City, HI	2019-11-26
Anarelis Galvez	Fort Lauderdale, US	2019-11-25	Pamela Williams	Honolulu, HI	2019-11-26
Mahina Okimoto	Laie, HI	2019-11-25	Christina Ambrose	Kaneohe, HI	2019-11-26
Barbara Krasniewski	Kailua, HI	2019-11-25	Brian Jahn	Milliani, HI	2019-11-26
Terry Pualoa	Honolulu, US	2019-11-25	Russ Hayes	Vashon, WA	2019-11-26
Bianca Ramos	Greeley, CO	2019-11-25	Zachary Ellison	Lawndale, CA	2019-11-26
Anne Towey Joyer	Kailua, HI	2019-11-25	J.Roselani Baricuatro	Lana'i City, HI	2019-11-26
Vee Leoiki	Pearl City, HI	2019-11-26	Kahaleanu		
Julie Funke	Kaneohe, HI	2019-11-26	Lynn Brown	Rolla, MO	2019-11-26
Koa Kaulukukui-Barbee	Kaneohe, HI	2019-11-26	Sara Cooper	Denver, CO	2019-11-26
Rowan Scothorn	Hilo, HI	2019-11-26	Tylen Root	Hamilton, MT	2019-11-26
Terril James Kaneall'ikeikioka'aina Williams	Whittier, CA	2019-11-26	Jessica dos Santos	Kahuku, HI	2019-11-26
Janet Ramos	Fort Lauderdale, US	2019-11-26	Walt Mix	Kailua, HI	2019-11-26
Joey Florilli	Louisville, US	2019-11-26	Annette Kaohelauli	Kaneohe, HI	2019-11-26
Megan Sullivan	Dublin, US	2019-11-26	Gina Forley	Kahuku, HI	2019-11-26
Lena Armodia	Waianae, HI	2019-11-26	Malia Akiona	Honolulu, HI	2019-11-26
			Mamo Martin	Saratoga Springs, UT	2019-11-26

Name	Location	Date	Name	Location	Date
Sandra Albers	Kaneohe, HI	2019-11-26	Patti Kline	Kailua, HI	2019-11-26
Jennifer Gasmen	Kaneohe, HI	2019-11-26	Claire Kellerman	Makawao, HI	2019-11-26
Michaela Arume	Kaneohe, HI	2019-11-26	James Simpliciano	Lahaina, HI	2019-11-26
Kahu Mariani	Kaneohe, HI	2019-11-26	Irish Barber	Kailua, HI	2019-11-26
Maile Loo	Kaneohe, HI	2019-11-26	dolores burke	castro valley, CA	2019-11-26
Jacquelyne Lindsey	Waipahu, HI	2019-11-26	Narrissa Spies	Hilo, HI	2019-11-26
Simone Derow-Ostapowicz	Kaneohe, HI	2019-11-26	Harold Lino	Kaneohe, HI	2019-11-26
Kapulani Antonio	Makawao, HI	2019-11-26	Wade Hiraishi	Honolulu, HI	2019-11-26
Vernon Enriques	Honolulu, HI	2019-11-26	Robert Larm	Kaneohe, HI	2019-11-26
Kristine Palaualelo	Kailua, HI	2019-11-26	Pris Fujoka	Kaneohe, HI	2019-11-26
Brandi Rivera	Ewa Beach, HI	2019-11-26	Madison Goff	Kaneohe, HI	2019-11-26
Thorben Wuttke	Kaneohe, HI	2019-11-26	Emeraldina Tevaga	US	2019-11-26
Marie Alohalani Brown	Honolulu, HI	2019-11-26	Fisilpeau Drummondo	US	2019-11-26
Randee Masuhara	Honolulu, HI	2019-11-26	Lisa Vegas	Kailua, HI	2019-11-26
Jan Makepa	Waianae, HI	2019-11-26	Joseph Remini	Fredericksburg, TX	2019-11-26
nicholas chagnon	Honolulu, HI	2019-11-26	Grace Kamikawa	Kaneohe, HI	2019-11-26
Lokelani Cummings-Watanabe	Aiea, HI	2019-11-26	Michael Kapuniai	Kihel, HI	2019-11-26
Cynthia Franklin	Honolulu, HI	2019-11-26	Deanna Keanini	Kaunakakai, HI	2019-11-26
Alana Beltran Wichman	Honolulu, US	2019-11-26	Maggie Hayden	Richmond, US	2019-11-26
George Yamashiro	Kaneohe, HI	2019-11-26	Jaylean Carrillo	Los Angeles, US	2019-11-26
Devin Lum	Kaneohe, HI	2019-11-26	Genesis Makaneole-Bragg	Kaneohe, HI	2019-11-26
Linken Irving Camara Jr	Kailua, HI	2019-11-26	Rinni Pratt	Kaneohe, HI	2019-11-26

Name	Location	Date	Name	Location	Date
Lisa M Lisa	Ewa Beach, HI	2019-11-26	Melissa Arnesen	Whittier, US	2019-11-26
Karen Galut	Kaneohe, HI	2019-11-26	margaret flyntz	Tucson, US	2019-11-26
chris brace	Pahoa, HI	2019-11-26	Michael Oh	Kaneohe, HI	2019-11-26
Allegra Kauo	Kihel, HI	2019-11-26	royce kovacich	Hilo, HI	2019-11-26
Rachel Aragon	Pahoa, HI	2019-11-26	Sherry Vicente	Hilo, HI	2019-11-26
MARY CHUN	Flagstaff, AZ	2019-11-26	Rose Latu	Kahuku, HI	2019-11-26
James Palea	Kapolei, US	2019-11-26	Jesse Reavis	Los Angeles, CA	2019-11-26
Leinani Salasua	Nanakuli, HI	2019-11-26	K Mendes	Kaneohe, HI	2019-11-26
Ashley Bullard	Waipahu, HI	2019-11-26	Robert Devlin	Napa, US	2019-11-26
Emily Parsons	Clarksville, TN	2019-11-26	Paul Noborikawa	Kaneohe, HI	2019-11-26
Kristina Schlömlcher	Klagenfurt Am Worthersee, Austria	2019-11-26	Yolanda Villarreal	Stevensville, US	2019-11-26
Joslyne Ball	Waianae, HI	2019-11-26	Alohilani Drummondo	Honolulu, US	2019-11-26
Suzanne Egan	Honolulu, HI	2019-11-26	Alika Ferreira	Kailua, HI	2019-11-26
Patrick costa	Honolulu, HI	2019-11-26	Nicole Gonzales	Kailua-Kona, HI	2019-11-26
Jasmine Mearling	Niles, US	2019-11-26	Virginia Escalante	Ocean View, HI	2019-11-26
Melissa Urquidí	Honolulu, HI	2019-11-26	Adonijah Imgrund	Kihel, HI	2019-11-26
Stephanie Herbon	Lihue, HI	2019-11-26	Wade Araki	Kaneohe, HI	2019-11-26
E Gonzales	Ocean View, HI	2019-11-26	Marissa Trent	Kaneohe, CA	2019-11-26
Thomas Engle	Honolulu, HI	2019-11-26	James Becker	Sayward, Canada	2019-11-26
Rayne Kauhi	Waianae, HI	2019-11-26	Patrick O'Malley	Kailua, HI	2019-11-26
Dr Alan Yugawa	Kaneohe, HI	2019-11-26	Jeri Miyasato	Honolulu, HI	2019-11-26
Matthew Kaufman	Boston, US	2019-11-26	Jeydy Villatoro	Lake Worth, US	2019-11-26

Name	Location	Date	Name	Location	Date
Joey stordvich	Princeton, US	2019-11-26	Chiara Coronado	Montrose, US	2019-11-26
Haley Hepton	Kaneohe, U.S. Outlying Islands	2019-11-26	Gray Edwards	Warrensburg, US	2019-11-26
Thomas Rau	Kaneohe, US	2019-11-26	Patrick Welsh	Raleigh, US	2019-11-26
Ruth Fujita	Honolulu, HI	2019-11-26	Jenna Hoff	fort lauderdale, US	2019-11-26
Marisa Thate	Honolulu, HI	2019-11-26	owen Ieckie	Orlando, US	2019-11-26
Tiani Hillegass	Honolulu, US	2019-11-26	Naomi Perry	Dacula, GA	2019-11-26
Neil Frazer	Kailua, HI	2019-11-26	Happy Fujita	US	2019-11-26
Jose Cosio	Ft. Dix, NJ	2019-11-26	Abigail Rose	Honolulu, HI	2019-11-27
Sylvia Hayashi	Kaneohe, HI	2019-11-26	Marilyn Alvarez	Santa Ana, US	2019-11-27
Jennifer Kishimori	Honolulu, HI	2019-11-26	Margaret Goettelmann	Kailua, HI	2019-11-27
Joseph Lichota	Honolulu, HI	2019-11-26	Cheryl Forsyth	US	2019-11-27
Jesse Boothe	Roanoke, US	2019-11-26	Arley Nozawa	Honolulu, HI	2019-11-27
Karoline Dos santos nascimento	Los Angeles, US	2019-11-26	Hau'oli Lorenzo-Elarco	Honolulu, HI	2019-11-27
arianna venegas	Cypress, US	2019-11-26	Helena Raja	San Bernardino, CA	2019-11-27
Rhiannon Callahan	Honolulu, HI	2019-11-26	Luanne Webster	Kaneohe, HI	2019-11-27
Zachary Whitfield	Arroyo Grande, US	2019-11-26	Aisha Richards	Kaneohe, HI	2019-11-27
Shevan Ibrahim	St. Louis, US	2019-11-26	Laurie Brown	US	2019-11-27
Carla Baltazar	Dallas, US	2019-11-26	cheryl greenwood	kailua-kona, HI	2019-11-27
Patricia Sugloka	Kaneohe, HI	2019-11-26	Victoria Yao	Kaneohe, US	2019-11-27
Douglas Kaapana	Burien, WA	2019-11-26	Angela Huntermer	Kahuku, HI	2019-11-27
Shayla Pang Kee	Honolulu, HI	2019-11-26	Kaitlyn Pack	Lomita, CA	2019-11-27
			A'Nahyah Muse	Baton Rouge, US	2019-11-27

Name	Location	Date	Name	Location	Date
xin zhou	Beaverton, US	2019-11-27	Michele Howe	Fort Wainwright, AK	2019-11-27
Izavel Ortiz	Olympia, US	2019-11-27	Noelle Hasegawa	Kaneohe, HI	2019-11-27
John Bergman	Albany, CA	2019-11-27	Michibata dkm2785@hawaii.rr.com	Kaneohe, HI	2019-11-27
Taylor Hall	Kailua, HI	2019-11-27	Laura Paul	US	2019-11-27
Kuu Goo	Las Vegas, US	2019-11-27	Patricia Molina	Honolulu, HI	2019-11-27
Bri Kawakami	Seattle, WA	2019-11-27	Tim Bowden	Honolulu, HI	2019-11-27
Mary Ewalani Manuel-Coats	Wailanae, HI	2019-11-27	Cynthia Mukoko	US	2019-11-27
Linda Kellar	Morrilton, AR	2019-11-27	Margaret Russo	Volcano, HI	2019-11-27
Nana-Honua Manuel	Volcano, HI	2019-11-27	Lorie Mimura	Aiea, HI	2019-11-27
Cherish Ihara	Kaneohe, HI	2019-11-27	Ian Nakachi	Navarre, NV	2019-11-27
Sean Ihara	Kaneohe, HI	2019-11-27	Cameron Hern	Layton, US	2019-11-27
Wolfe Thomas	Volcano, HI	2019-11-27	Victoria Rodriguez	Morristown, US	2019-11-27
Macy Goldis	Aurora, CO	2019-11-27	Gloria Velez	Orlando, US	2019-11-27
Laura HENDERSON	Hilo, HI	2019-11-27	Mark Pooler	Dexter, US	2019-11-27
Suzanne Pagan	Kailua, HI	2019-11-27	Jaron Stewart	Dallas, US	2019-11-27
Kaylee Nye	Salt Lake City, US	2019-11-27	Shawn Sn	Austin, US	2019-11-27
Nichole Bryant	Harlem, US	2019-11-27	Caldyn Norton	Baton Rouge, US	2019-11-27
Alister McDonough	Salt Lake City, US	2019-11-27	Michael Damitio	Kaneohe, HI	2019-11-27
Laura Gerwitz	Honolulu, HI	2019-11-27	Cole Collier	Lansing, US	2019-11-27
Ashley Tahauri	Kula, HI	2019-11-27	Joanie Pruet	Kaunakakai, HI	2019-11-27
Ivy Hoekman	Renton, WA	2019-11-27	niko butczynski	Kingston, US	2019-11-27
Ilaisaane Hailola	Honolulu, HI	2019-11-27			

Name	Location	Date	Name	Location	Date
Priscila Castaneda	San Antonio, US	2019-11-27	Sarah Winston	US	2019-11-28
John Cooper	Naalehu, HI	2019-11-27	Zoe Sing	Honolulu, HI	2019-11-28
Kalani Pruet	Kaunakakai, HI	2019-11-27	Dylan Ramos	Honolulu, HI	2019-11-28
Pablo Freese	San Juan, US	2019-11-27	Tiandra Teel	Orlando, US	2019-11-28
David Metz	Columbus, OH	2019-11-27	Donna Allen	Terrell, US	2019-11-28
Scott Golden	Virginia Beach, US	2019-11-27	Matt Cadorette	Somerset, US	2019-11-28
Tanya Harris	Kaneohe, HI	2019-11-28	Viviana Obando	Aguadilla, US	2019-11-28
neva fotu	Kahuku, HI	2019-11-28	Miho Manimationzzzzzz	Saint Joseph, US	2019-11-28
Jennie Peterson	Honolulu, HI	2019-11-28	Sandee Pa Moniz	Waimanalo, HI	2019-11-28
Ameenah Fowler	Monterey, CA	2019-11-28	Christina Weisbrod	Severna Park, US	2019-11-28
Jeff Funke	Parshall, ND	2019-11-28	Jessica Sewell	Moreno Valley, US	2019-11-28
MaryEllen Ehman	Manchester, US	2019-11-28	Rose Hernandez	Seaside, US	2019-11-28
Slid Smith	Rogersville, US	2019-11-28	Karthik Pallerla	Brighton, US	2019-11-28
Katherine Gamboa	Denver, US	2019-11-28	Genesis Perez	Carolina, US	2019-11-28
Mardi LaPrade	Honolulu, HI	2019-11-28	Dune Blizzardclaw	Los Angeles, US	2019-11-28
Lynette Ayon-Ayon	Aiea, HI	2019-11-28	Deborah Deibler	Aiea, HI	2019-11-28
Malia Jacklitch	Winston-Salem, US	2019-11-28	James Blair	Salem, US	2019-11-28
nuke packo	US	2019-11-28	Carly Handshy	Independence, US	2019-11-28
David Kaplan	Las Vegas, NV	2019-11-28	Kassidy Dwyer	Philadelphia, US	2019-11-28
Joshua Martin	US	2019-11-28	René Rosendahl	Irvine, US	2019-11-28
Colin Shimabukuro	Honolulu, HI	2019-11-28	Gina Thompson	Mesa, US	2019-11-28
Kyle Abaslat	Honolulu, HI	2019-11-28	James Cox	Willis, US	2019-11-28

Name	Location	Date	Name	Location	Date
Emily Garcia	Queens, US	2019-11-28	michele rule	Concord, US	2019-11-30
Stanley Kaneshiro	Olivehurst, CA	2019-11-28	FAY MICHIBATA	Kaneohe, HI	2019-11-30
Brent Condemilcor	Waipahu, US	2019-11-29	Kahala Kane	Kailua, HI	2019-11-30
Daisy Focker	Des Plaines, US	2019-11-29	Robin Scanlon	Kaneohe, HI	2019-11-30
Kainoa TOOMATA	Kaneohe, HI	2019-11-29	Jennife Tolentino	Lihu'e, HI	2019-11-30
JamieLucy Ybarra	US	2019-11-29	Jennifer Galewski	Bend, OR	2019-11-30
Lourdes Millan	San Diego, CA	2019-11-29	Ashley Quintal	Kaneohe, HI	2019-11-30
Dona Simmons	Kula, HI	2019-11-29	Leah Laramie	Honolulu, HI	2019-11-30
Isaac Taguchi	Seattle, HI	2019-11-29	Trina Christensen	Kaneohe, HI	2019-11-30
Kimberly Sales	Waipahu, HI	2019-11-29	Samuel Cox	Kaneohe, HI	2019-11-30
Pam Sukdao	Tampa, US	2019-11-29	Bronson Azama	Kaneohe, HI	2019-12-01
Shene Aranda	Austin, US	2019-11-29	Alex Iyechad	Honolulu, HI	2019-12-01
Dillon Rainwater	Kailua, HI	2019-11-29	Jared Wilson	Kaneohe, HI	2019-12-01
Sarah Chekroun	Summerville, US	2019-11-29	Kimberly Kauweoloa	Honolulu, HI	2019-12-01
Dakota Kleefeld	Homer, US	2019-11-29	Troy Murakami	Honolulu, HI	2019-12-01
Christopher Chun	Honolulu, HI	2019-11-29	Kathy Salis	Kaneohe, HI	2019-12-01
Fahmida Nawaz	Little Rock, US	2019-11-29	Kelley Peppers	Kaneohe, HI	2019-12-01
Chloe Roberts	Boise, US	2019-11-29	Tracy Larrua	Kaneohe, HI	2019-12-01
Jinky Chan	Roseville, CA	2019-11-29	Stuart Silva	Gardena, CA	2019-12-01
Randen Menke	Hilo, HI	2019-11-29	Terri Humphrey	Kaneohe, HI	2019-12-01
Becket Mount Washburn	Lawrence Township, US	2019-11-29	Katie Finrock	Kaneohe, HI	2019-12-01
Joyce Motooka	Kailua, HI	2019-11-29	Anne Stone	Kaneohe, HI	2019-12-01

Name	Location	Date
Mack Kalahiki	Waimanalo, HI	2019-12-01
Tiffany Pridgen	Warwick, RI	2019-12-01
Nicole Hosaka	Kaneohe, HI	2019-12-01
Tiffany Kong	Kaneohe, HI	2019-12-01
Edwin Lesperance	Kaneohe, HI	2019-12-01
Jake Ito	Kaneohe, HI	2019-12-01
Sue Arthur	Mullumbimby, Australia	2019-12-01
Deanna Hara	Honolulu, HI	2019-12-01
Hoku Zuttermeister	Kaneohe, US	2019-12-01
Valerie Mariano	Honolulu, HI	2019-12-01
danielle real	California	2019-12-01
Darryl Kaneyuki	Kaneohe, HI	2019-12-01
Alyson Paul	Kaneohe, HI	2019-12-01
LauraLei Smith	Summerville, SC	2019-12-01
Kathleen Agaran	Wailanae, HI	2019-12-01
Crisy Hurst	Kaneohe, HI	2019-12-01
Natalie Haines	Kaneohe, HI	2019-12-01
Diana Berinobis	Kaneohe, HI	2019-12-01
arnette ramos	Hilo, HI	2019-12-01
Jessica Ofoia	Kaneohe, HI	2019-12-01
Steven Hurst	Hawaii	2019-12-01
leaf fleming	US	2019-12-01

Name	Location	Date
Lauren Jessup	Irwin, US	2019-12-01
Kishalay Mallick	New York, US	2019-12-01
Roy T	Kaneohe, HI	2019-12-01
Peter McLean	Breakfast Point, Australia	2019-12-02
Gwen Kort Rodrigues	Keaau, HI	2019-12-02
Michael Jones	Kaneohe, HI	2019-12-02
Matthew Cadena	Tulsa, OK	2019-12-02
Michael Baldauf Jr.	Kaneohe, HI	2019-12-02
Kim Falinski	Honolulu, HI	2019-12-02
Janelle McCabe	Honolulu, HI	2019-12-02
Lorna Waiolama Williams	Gardenia, CA	2019-12-02
Nicole Fleming	Las Vegas, NV	2019-12-02
Candido Manatad	Kaneohe, US	2019-12-02
Lester Bischoff	Kapolei, HI	2019-12-02
Fautua Lefiti	Kaneohe, HI	2019-12-02
Kalei Kekahuna	kaaawa, HI	2019-12-02
Cheyenne Kane	Henderson, NV	2019-12-03
John Carson	Kaneohe, HI	2019-12-03
Justin Lee	Kaneohe, HI	2019-12-03
Lita Mendy	Las Vegas, NV	2019-12-03
Jackie P	Kaneohe, HI	2019-12-04
DonDee Reames	Kaneohe, HI	2019-12-04

Name	Location	Date
Georgette Lau	Kaneohe, HI	2019-12-04
Dail Halas	Pearl City, HI	2019-12-04
SUNG YOON	Honolulu, HI	2019-12-04
Kaneala Bright	Honolulu, HI	2019-12-04
raramanisa smith	Phoenix, AZ	2019-12-05
Drena Rodrigues	US	2019-12-05
Gay Shinbara	Kaneohe, HI	2019-12-05
Wesley Yasuda	Honolulu, HI	2019-12-05
Monica Zanfas	Woodland Park, CO	2019-12-05
Dorothy Laughlin-Whitaker	Kaneohe, HI	2019-12-06
Sandra Coons	Kaneohe, HI	2019-12-06
Warren Dennison	Madison, CT	2019-12-06
Renee Winchester	Honolulu, HI	2019-12-07
Patricia Auld	Kaneohe, HI	2019-12-07
Paloma Almanza	Kaneohe, HI	2019-12-07
John Cazinha	Kaneohe, HI	2019-12-07
Leona Souza	Kaneohe, HI	2019-12-07
Leanne MacIntire	Kaneohe, HI	2019-12-07
Christine Mactagone	Kaneohe, HI	2019-12-07
randa katada	Kaneohe, US	2019-12-07
JT Thomas	UK	2019-12-07
Chaunda Rodrigues	Hilo, HI	2019-12-07

Name	Location	Date
Jessica Russell	Honolulu, HI	2019-12-07
Harry Hansen	Ewa Beach, HI	2019-12-08
Melissa Spizziri-Mercado	Valparaiso, IN	2019-12-08

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SaveKaneohe.org

Recipient: **State of Hawaii Land Use Commission**

Letter: **Greetings,**

Save Kaneohe Conservation Land from Graveyard Expansion

Comments

Name	Location	Date	Comment
Shaun McCreedy	Kaneohe, HI	2019-10-22	"We need to protect our Aina and environment!"
Cynthia McCreedy	Kailua, HI	2019-10-25	"I want to preserve our green space.. people do not need to be buried in the ground in a coffin.. they can be cremated and placed in a small box which does not require taking land that should be preserved .. traditional burial is an antiquated idea!"
Keani Wong	Honolulu, HI	2019-10-26	"I oppose this project!!! They have more than enough land between both Hawaiian Memorial and Valley of the Temples for burial purposes. They don't need to expand Hawaiian memorial! This is just a deceitful way for them to create more burials grounds when we have enough already, all for their own benefit. MORE MONEY! This is not going to benefit the community! STOP THE DEVELOPMENT OF OUR 'ĀINA AND OUR WAHI PANAI!!!"
Serena Rivera	Kaneohe, HI	2019-10-26	"Being born and raised in Kāne'ohe we really DO NOT need any more development. Traffic is already as bad as it gets, conservation land should be left UNTOUCHED regardless for ANY reason, and climate change is a real thing. Do your research, recognize the changes in your environment, and stop listening to these ignorant politicians that believe climate change is a myth. KEEP HAWAII, HAWAII! And leave our sweet Kāne'ohe ALONE. KŪ KI'AI 'ĀINA! ALOHA 'ĀINAI!"
Nancy Vincent-Green	San Rafael, CA	2019-10-26	"This area needs to be saved as open space."
Denver Kealahelaikapo Tay'a	Laie, HI	2019-10-29	"Teresann Makaiwi Tau'a"
Debbie Sur	Kaneohe, HI	2019-10-29	"For over 50 years, my family have been living in Kaneohe next to the conservation land. In fact that was one of the reasons my father select the house. The State should never have sold the conservation land to prevent any development. But since they already did without the community's knowledge, the State needs to protect the land by ensuring that the zoning can never be changed."
Alyssa Tatum	Durango, CO	2019-10-31	"There is no need to take the trees down and expand the cemetery"
catherina pratt	Kaneohe, HI	2019-11-06	"We need to keep conservation land as conservation land! It is identified as that for a reason."
Makalapua Llua	Pearl City, US	2019-11-06	"Malama 'āina!"
Kanani Kalahiki	Kailua, HI	2019-11-06	"Enough is enough! Conservation land should be CONSERVED, not desecrated."
Tyrone Heen	Honolulu, HI	2019-11-06	"No, every last inch of O'ahu does not have to be covered by houses and development! Stop the insanity!"
Sarah Machado	Kailua Kona, HI	2019-11-07	"Enough already"

Name	Location	Date	Comment
Brooks Shigemoto	Honolulu, HI	2019-11-07	"Enough already! Preserve what's left of our beautiful Islands. Greedy people need to know they have limits too!"
Joanna Pokipala	Honolulu, HI	2019-11-07	"No more development!"
Caroline Nascimento	Honolulu, HI	2019-11-08	"#enoughalready #malamadaaina"
Danielle Battisti	Seale, AL	2019-11-08	"The beauty of our Kāne'ohe is being raped by the greedy!! Stop tearing it apart! We need conservation land to STAY! We the people are against this!"
Jaymee Kelii	El Mirage, AZ	2019-11-08	"ALOHA 'ĀINA!"
Mallani Makainai	Kaneohe, HI	2019-11-10	"This is why I will be cremated instead."
Tiana Dole	Honolulu, HI	2019-11-10	"Enough development of any kind already, this prpject was killed the first time leave it be."
Holly Sevier	Kaneohe, HI	2019-11-11	"Please save conservation land to ensure Kāne'ohe stays resplendent. This site is an area of outstanding natural beauty and should be treated as such. Aloha aina!"
Nancy Jones	Waianae, HI	2019-11-16	"Kaneohe has been a dear place for us since we began selling at the Windward Mall market years ago. Rather than rezone this site for graveyard use and jeopardize protected watershed/flood retention options, surely there must be a way to increase grave space at Valley of the Temples or at Millilani Cemetery by Costco-Waipio?"
Julianne McCreedy	Kaneohe, HI	2019-11-17	"There are many alternatives to memorialize our loved ones that does not involve destroying precious land and natural resources. We live on an island with limited space. We need to protect and preserve our 'aina and natural resources for future generations."
Kathy Mras	Anaheim, CA	2019-11-18	"I am signing because my cousin's home is in that circle and she should not have to deal with this. In Italy, folks are cremated and put into little walls. Do not mess with the natural land."
Larry Seth Steinberg	Millilani, HI	2019-11-21	"Existing recreation areas have been denied required maintenance. Disturbance of additional historical/archaeologically significant, unmolested, public land is not justified."
Camille Rodrigues	Las Vegas, NV	2019-11-22	"Enough is enough!"
Gregory Rogers	Brookline, MA	2019-11-22	"My wife grew up in this neighborhood. The proposed cemetery expansion will have a huge negative impact on the neighborhood. There is no need for this expansion. It had been denied many times in the past, and it should be stopped permanently!"
Meleana Adams	hilo, HI	2019-11-23	"Enough is enough! Stop taking whats left of Hawai'i"
Mary O'Brien	Kaneohe, HI	2019-11-23	"There are no valid reasons to allow Hawaii Memorial Park to develop this conservation land. The land was put in the conservation category for a very good reason. The area is subject to heavy rainfall and needs the absorbing benefit of a natural environment. Homes would be in jeopardy of flooding and Kaneohe Bay would be subject

Name	Location	Date	Comment
			to heavy polluting from water run off. In addition it is home to the endangered damsel fly. Valid and compelling reasons have been given repeatedly to deny permission to develop this area. When the property was bought Hawaii Memorial Park knew the conditions. Don't be swayed by their "new, improved" presentation. Please do the responsible thing and deny this request."
Samantha Preis	Kaneohe, HI	2019-11-23	"We should encourage more sustainable management of corpses. We cannot continue to support burying bodies at the cost of our environment."
Brenda Watene	Haleiwa, HI	2019-11-25	"Not enough land on this island is being conserved...too much development. Cremation is an option and for those who don't believe in that they'll have to find an alternative...no more land development please. Aloha Aina"
Ramona Okimoto	Laie, HI	2019-11-25	"Conservation land is designated as such to CONSERVE it!!! I am against expanding into these lands for development or graveyards - which are actually big business. Be more resourceful, dust to dust ashes to ashes! Conserve Hawaii for our future!"
James Rodrigues	Waianae, HI	2019-11-25	"Pave paradise put up a parking lot or grave yard or telescope or windmills or houses. Stop the madness. NO MORE CONSERVATION LAND DEVELOPMENT. 郎"
Kamalani n La'akea Hamilton	Hilo, US	2019-11-25	"Keep conservation land conservation!!!! A'OLE Aloha Aina !!!◆◆◆"
PUAALAOKALANI NIHAU	Kailua-Kona, HI	2019-11-25	"my opinion is: if you are not of ancestral blood to the Islands, then they should be buried in their own homeland. "Return to your ancestral rooted land". No disrespect it is RIGHT!!!"
Ken Miyasato	Honolulu, HI	2019-11-25	"I am signing this petition because I believe the Oneawa hillsides should not be rezoned from conservation land. The State Land Use Commission has already ruled that this land should remain conservation, and it is distressing that the voices of long time Kaneohe residents are being ignored and corporations with deep pockets keep trying to change the zoning to promote development."
Iwalani Christian	Brier, WA	2019-11-25	"Protect Kanahale (Forest) and Conservation land"
Mahina Okimoto	Laie, HI	2019-11-25	"we need to protect and preserve the historic Kawa'ewa'e Heiau complex"
Terry Pualoa	Honolulu, US	2019-11-25	"I think everybody should stop doing this to the land...People can get cremated if there's no more room to bury them. Hello."
Vee Leoiki	Pearl City, HI	2019-11-26	"Enough with this fake state. You made the rules now read them. The logic behind the land grab only adds to the ruining of Hawaii."
Daniel Forman	Millilani, HI	2019-11-26	"conservation land"
Keke Manera	Pearl City, HI	2019-11-26	"Hawaii has had enough with all the development and destruction of the islands. This needs to stop!!!"

Name	Location	Date	Comment
Brian Jahn	Millilani, HI	2019-11-26	"Hewa lākou"
Lynn Brown	Rolla, MO	2019-11-26	"The Hawaiian land is limited and the resources are rare and endangered. People should be buried on the mainland or out to sea."
Kapulani Antonio	Makawao, HI	2019-11-26	"Signing for the pinao, the trees and the 'āina."
Vernon Enriques	Honolulu, HI	2019-11-26	"NO!!! NO EXPANSION!!"
Randee Masuhara Masuhara	Waipahu, HI	2019-11-26	"IT MAKES NO SENSE♦"
Claire Kellerman	Makawao, HI	2019-11-26	"Aloha Kanaka, Kia'i, people of this land..."
James Simpliciano	Lahaina, HI	2019-11-26	"Conservation means protect our trees and nature at all cost."
Robert Larm	Kaneohe, HI	2019-11-26	"Conservation land should remain conservation land. Please do not be so short sighted."
Emeraldina Tevaga	US	2019-11-26	"Aloha `Āina #"
chris brace	Pahoa, HI	2019-11-26	"Malama aina."
Karen Galut	Kaneohe, HI	2019-11-26	"Instead of rezoning conservation land, we should be preserving it for future generations."
Karen Galut	Kaneohe, HI	2019-11-26	"Conservation land, once rezoned, is "lost" forever. Conservation land should be preserved for future generations."
Leinani Salausa	Nanakuli, HI	2019-11-26	"Love the land"
Stephanie Herbon	Lihue, HI	2019-11-26	"Malama Pono Aina"
Thomas Engle	Honolulu, HI	2019-11-26	"I'm signing this petition because we need to retain every square inch of conservation land that we currently have and we need to increase the amount of conservation land on Oahu. We have already by far overdeveloped on Oahu's and done terrible amounts of destruction to our islands native species. We do not need to destroy undeveloped lands for cemeteries, we must utilize our existing cemetery facilities and save as much forests and undeveloped lands as possible. No taking conservation lands for cemeteries!!"
Rose Latu	Kahuku, HI	2019-11-26	"Ku Kia'i Hawai'i nei!! Til' the last aloha 'aina!!!"
Nicole Gonzales	Kailua-Kona, HI	2019-11-26	"Malama da Aina!"
Ruth Fujita	Honolulu, HI	2019-11-26	"Good grief, let's not start getting stupid."
Douglas Kaapana	Burien, WA	2019-11-26	"The authority and industry needs to be questioned on their kuleana to the aina, when buying and selling it."
Cheryl Forsyth	US	2019-11-27	"NO to any other developments on the aina...."

Name	Location	Date	Comment
Helena Raja	San Bernardino, CA	2019-11-27	"so sad and disrespectful they are to the sacred land of Hawaii and the ancestors."
Laurie Brown	US	2019-11-27	"Too much sacred land is being taken over. It's not right and it's not good for the aina"
Kaitlyn Pack	Lomita, CA	2019-11-27	"There are multiple various options for returning the human body to earth once the spirit has left... there are not multiple various options for maintaining nature. The right choice is clear."
Mary Ewalani Manuel-Coats	Walanae, HI	2019-11-27	"I strongly oppose anything being built without the Beneficiaries consultation!"
Macy Goldis	Aurora, CO	2019-11-27	"Trees need to be left alone"
Laura HENDERSON	Hilo, HI	2019-11-27	"Save the Aina enough is enough !!!"
Ashley Tahauri	Kula, HI	2019-11-27	"Aloha 'āina! What's left of Hawai'i. Ua iāwa!!!"
JamieLucy Ybarra	US	2019-11-29	"Trees provide coolness, oxygen and is needed for our climate. The development of land for cemeteries need to stop. Human remains should be cremated and trees should be planted to create a forest."
Ashley Quintal	Kaneohe, HI	2019-11-30	"It's bullshit"
Jared Wilson	Kaneohe, HI	2019-12-01	"Enough is enough! No more new building! Smh"
Stuart Silva	Gardena, CA	2019-12-01	"Enough already. Too much encroaching already. Too close to the neighborhood."
Sue Arthur	Mullumbimby, Australia	2019-12-01	"Protect the Oneawa forest as these are the lungs of Kaneohe. Stop the destruction"
Crisy Hurst	Kaneohe, HI	2019-12-01	"Enough already!"
raramanisisga smith	Phoenix, AZ	2019-12-05	"Until there's nothing left :("
Drena Rodrigues	US	2019-12-05	"Are they going to take all our land? I grew up there and was glad to see that we still had some untouched spaces left. Hawaii is slowly being gobbled up and will no longer look like paradise. We must stand up and say A'ole at some point. Aloha Aina E Hu E! ♦♦♦♦♦"
Chaunda Rodrigues	Hilo, HI	2019-12-07	"Conservation land should be protected. If Hawai'i needs more land for locals, it needs to reduce the amount of foreign buyers for existing land and prioritize land use for local interests."

EXHIBIT 2

STOP Hawaiian Memorial Park Expansion

Petition to Keep Oneawa Hillside as Conservation

Petition summary and background	Texas-based Service Corporation International has submitted a revised proposal to expand Hawaiian Memorial Park. The land is currently zoned in the conservation district, and we would like to keep the land's designation.
Action petitioned for	We, the undersigned, are concerned citizens who urge our leaders to act now to keep the Mahinui Hillside (TMK: 45033001) zoned in the conservation district. (LUC District Boundary Amendment: A17-804)

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Printed Name	Signature	Address
Shirlene Uyehara	Shirlene Uyehara	45-350 Mokualele
Wayne Silva	Wayne A. Silva	45-344 Mokualele
John Bennett	John Bennett	45-340 Mokualele
Jolene Nakagawa	Jolene Nakagawa	1624 NOKUWA ST.
Naomi Nakagawa	Naomi Nakagawa	95-158 KAHOLA ST.
Thomas Chuck	Thomas Chuck	
Roxanne Chuck	Roxanne Chuck	
Michael Takamatsu	Michael Takamatsu	
Chris Takamatsu	Chris Takamatsu	91-1203 Kaneana St 'B
Diane Maxwell	Diane Maxwell	45-338 MOKULELE DR.
Tammy Norton	Tammy Norton	45-669 MELEKUA RD
Keith Cuzzing	Keith Cuzzing	45-333 MOKULELE DR.

clarkinsensei@gmail.com
nsion mha3082996@
servation aol.com

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STOP Hawaiian Memorial Park Expansion Petition to Keep Oneawa Hillside as Conservation

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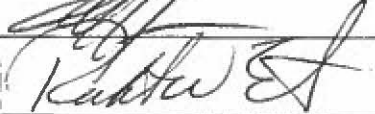

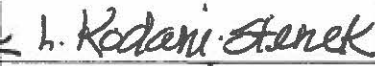

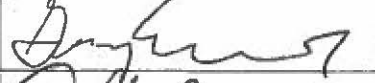

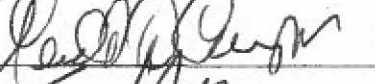

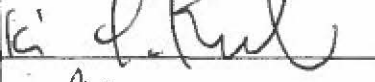

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STOP Hawaiian Memorial Park Expansion

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Printed Name	Signature	Address
MARKE. LOGAN		P.O. BOX 399 KAILUA, HAWAII 96734
Robert Eichele		PO BOX 355 KAILUA, HI 96734
Justin Ito		981998 Hapai St. Aiea HI 96701
Lucinda Kodani-Stenek		2916 Date St. #14-D Hon. HI. 96816
Neumann Stenck		2516 Hale St. #404 Honolulu HI 96816
Gary Ekornik		1350 Ala Moana Blvd Honolulu HI 96814
Dallas Purnoy		3802 Paha Ave Hon. HI 96816
Gerald Carr		1600 Ala Moana 1504 Honolulu HI 96816
Eric Mai		1042 Makaniwa Honolulu HI
Peter Rudinski		397 Opihi Koa Place Honolulu HI 96822
Angela Kavanagh		45-366 Kaula Dr. Honolulu HI
Evelyn Kurogi		45-351 Mahaloan Kaneohe 96744

STOP Hawaiian Memorial Park Expansion

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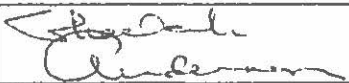
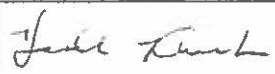
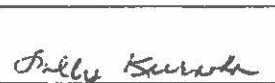
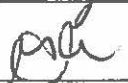
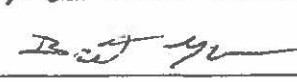
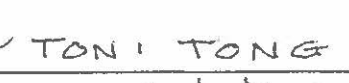
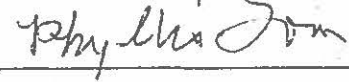
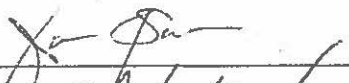
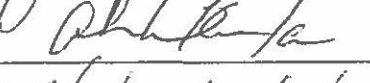
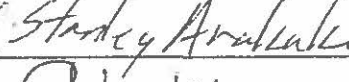

Printed Name	Signature	Address
Lorna Kaneshiro	<i>Lorna Kaneshiro</i>	45-306 Lehuula St
HERMAN Moore	<i>Herman Moore</i>	45-443 Lupo St
Andrew Shurtan	<i>Andrew Shurtan</i>	45-431 Lupo St.
Edwina Ahuna	<i>Edwina Ahuna</i>	45-435 Lupo St
Avis Nakano	<i>Avis Nakano</i>	45-429 Lupo St
Joanne Holokai	<i>Joanne Holokai</i>	45-425 Lupo St.
Sadie Dudoit	<i>SADIE Dudoit</i>	44-423 Lupo St
Brian King	<i>Brian King</i>	45-407 Lupo St
William Schilling	<i>William Schilling</i>	45-412 Lupo St.
KAWOHI SCHILLING	<i>Kawoichi Schilling</i>	811
Sharmayne Schilling	<i>Sharmayne Schilling</i>	45-412 Lupo St. ^{Kawoichi 961}
Amy Taniguchi	<i>Amy Taniguchi</i>	45-434 Lupo St

STOP Hawaiian Memorial Park Expansion

Petition to Keep Oneawa Hillside as Conservation

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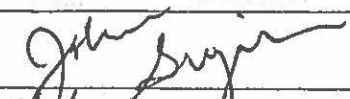
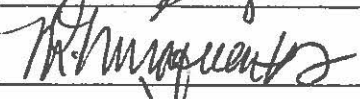
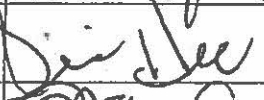
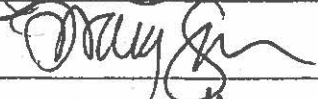
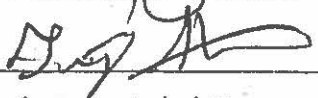
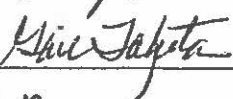




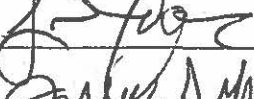
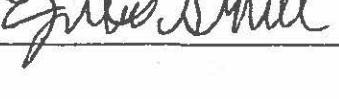
Printed Name	Signature	Address
Sheliah Anderson		45 189 Nāmoku St
MARILYN KURAKA		45-185 Nāmoku St
Polly Kuraka		45-185 Nāmoku St
Glenn McCabe		45 351 Lehuilua St
Brent Yuel		45355 Lehuilua St
TONI TONG	TONI TONG	45 - 333 Lehuilua St
Phyllis Tom		45 - 323 Lehuilua St
JAIME SANCHEZ		45-319 Lehuilua St
ALIKI KINIMAKA		45-315 Lehuilua St
Stanley Arakaki		45-307 Lehuilua St
ROD KUHANA		45-305 Lehuilua St
LETICIA KANEHOE		45-306 Lehuilua St

STOP Hawaiian Memorial Park Expansion

Petition to Keep Oneawa Hillside as Conservation

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Printed Name	Signature	Address	F
John Sugrue		45-451 Ohaka St	8
Michelle Mirafuentes		45-451 Ohaka St.	8
Vivi Hee		45-456 Ohaka St.	8
Tracy Larnue		45-464 Nakulua St.	8
Greg Stearns		45-437 Nakulua St	
Gail Takeki		45-687 Kapaehala Rd	
Chissy Mynster		301 Ilimaka Pl.	
Rose Colagne		47-547 Nenehiwa	9
Tonya Parker		220 Aholoas	8
Hiliana Amato		41-236 Ilaulike St.	8
Jessica Ambrose		47-523 Ahumama Rd.	
Julie Schell		114 Mokuman Dr.	8

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Printed Name	Signature	Address
Marilyn Matsunaga	Marilyn Matsunaga	45-149 Namoku St
Lynn Hirsch	[Signature]	1000 Kapiolani Blvd Honolulu 96811
Richard Hira	[Signature]	45-175 NAMOKU 96844
ALVINETTE SCH	Alvinette Schiavone	9428 KUPAUNA WAY
NICHOLAS SAKAKI	[Signature]	45-341 NAKULUAI DR
Lara Fujita	Lara Fujita	45-318 NOKULUAI
Ryan Suelo	Ryan Suelo	45-504 NAKULUAI
THOMAS SUELO	Thom M. Suelo	
Shannon Suelo	Shannon Suelo	
Mark Terance	Mark Terance	45-508 NAKULUAI ST
Richard Ihara	Richard Ihara	45-507 NAKULUAI ST
FRANCIS	Francis	45-513 NAKULUAI

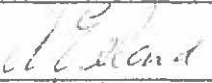

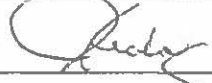

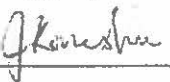
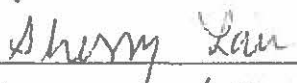
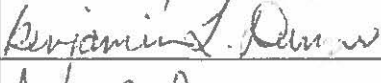
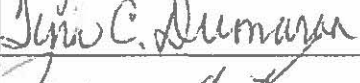
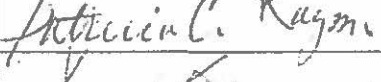



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STOP Hawaiian Memorial Park Expansion

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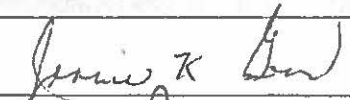
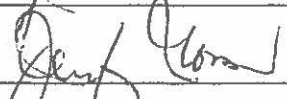



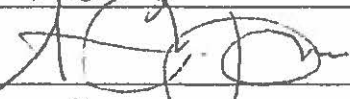
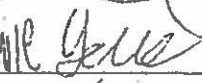

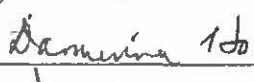
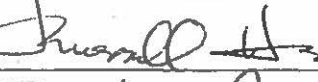
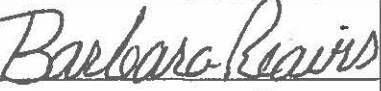

Printed Name	Signature	Address
August E. Erickson		45-522 NAKULUA ST
WLU GOODHUE		45-529 NAKULUA ST
JOE KEOLA		
MICHELLE DANIEL		45-538 NAKULUA ST
JAN KANESHIRO		45-546 NAKULUA PL
Sherry Lam		45-532 NAKULUA ST
Benjamin Dumanan		45-524 NAKULUA ST
Tina Dumanan		45-524 NAKULUA ST
PAT KAYANO		45-516 NAKULUA ST
Dennis Kayano		45-516 NAKULUA ST
Dolores Ahlu		45-512 NAKULUA ST
Chelsea Tavo		45-512 NAKULUA ST

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Petition to Keep Oneawa Hillside as Conservation

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Action petitioned for	We, the undersigned, are concerned citizens who urge our leaders to act now to keep the Mahinui Hillside (TMK: 45033001) zoned in the conservation district. (LUC District Boundary Amendment: A17-804)

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Printed Name	Signature	Address	F
Tennie Gomes		2079 Aiamanu St	
Jennie Gomes		2079 Aiamanu St	
Nicole Jamile		2079 Aiamanu St	
Shawn Benson		2345 Komo mai St	
Seth Jamile		1718 Kuahaka St	
Ashley Davis		1718 Kuahaka St	
Kayla Gomes		2079 Aiamanu St	
JOHN HURN		2374 ANIHINIA	
DAMIANNA HO		1364 Kulua Pl Kailua	
Russell Ho		1364 Kulua Pl	
Barbara Reavis		45422 OHAKA ST	
Robert Reavis		45422 Ohaka	

STOP Hawaiian Memorial Park Expansion

Petition to Keep Oneawa Hillside as Conservation

Petition summary and background	Texas-based Service Corporation International has submitted a revised proposal to expand Hawaiian Memorial Park. The land is currently zoned in the conservation district, and we would like to keep the land's designation.
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Printed Name	Signature	Address
KARL REAVIS	Karl A. Reavis	45-422 OHAWA ST
BREE WATANABE	Bree Watanabe	45427 OHAWA ST
Adam Niinigayan	Adam Niinigayan	45427 OHAWA ST
Koby Villalobos	Koby Villalobos	45427 Ohawa St
Wilma Hakama	Wilma Hakama	1477 Kaumali Pl
Bonnie Makino	Bonnie Makino	45-434 Ohawa St.
Kaelene Wong	Kaelene K. Wong	45-435 Ohawa St.
Valerie Wong	Valerie Wong	45-435 Ohawa St
Nicole Holt	Nicole Holt	45-439 Ohawa St
Valerie Hudovic	Valerie Hudovic	45-175 Ohawa Pl.
JESSE REAVIS	Jesse Reavis	45-173 OHAWA PL
LEONORA REAVIS	JESSE REAVIS	"

LEONORA

STOP Hawaiian Memorial Park Expansion

Petition to Keep Oneawa Hillside as Conservation

Petition summary and background	Texas-based Service Corporation International has submitted a revised proposal to expand Hawaiian Memorial Park. The land is currently zoned in the conservation district, and we would like to keep the land's designation.
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Printed Name	Signature	Address
ADRIENNE Miyasato	<i>Adrienne Miyasato</i>	45-405 Ohaka St 96744
Lydia Chung	<i>Lydia Chung</i>	45-431 Ohaka St 96744
Gloria Tsuha	<i>Gloria Tsuha</i>	45-431 Ohaka St 96744
Minang Marizumi	<i>Minang Marizumi</i>	1625 AA St., 96741
DIAN KAU	<i>Dian Kau</i>	45-412 OHAKA ST.
Kahakili Lutaika	<i>Kahakili Lutaika</i>	45-412 OHAKA ST.
Brian Moon	<i>Brian Moon</i>	45-416 Ohaka St
Sharon Ramello	<i>Sharon Ramello</i>	45-417 Ohaka St
Tania deJesus	<i>Tania deJesus</i>	45-417 Ohaka St
Barbara Gomes	<i>Barbara Gomes</i>	45-421 Ohaka St.
Marc Kawaguchi	<i>Marc Kawaguchi</i>	47-52C Mendocino
Clifford Carden	<i>Clifford Carden</i>	45-422 OHAKA ST.

STOP Hawaiian Memorial Park Expansion

Petition to Keep Oneawa Hillside as Conservation

Petition summary and background	Texas-based Service Corporation International has submitted a revised proposal to expand Hawaiian Memorial Park. The land is currently zoned in the conservation district, and we would like to keep the land's designation.
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Printed Name	Signature	Address
Kari Pratt	<i>Kari Pratt</i>	45-735 Wainana
Kaulana Pratt	<i>Kaulana</i>	45-735 Wainana
Linda Cheng	<i>Linda Cheng</i>	45-431 Oneha St
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX ST
Gary Reavis	<i>Gary Reavis</i>	46-106 Emepela
Annie Nguyen	<i>Annie Nguyen</i>	46-283 Kahukipa St #C101
Geri Shungeto	<i>Geri Shungeto</i>	94-651 Homeni pl.
Richelle Niu	<i>Richelle Niu</i>	45-458 Lipala St
Doreen Louie	<i>Doreen Louie</i>	45-511 Mokulele Dr
Jean Hakazon	<i>Jean Hakazon</i>	1503 Ulukoua Pl
Casha Souza	<i>Casha Souza</i>	45-639 Naneahele
Zon Goo	<i>Zon Goo</i>	1626 Kanapua Dr

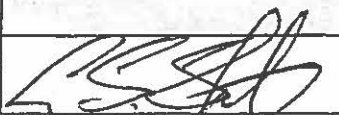
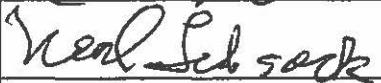
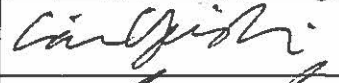
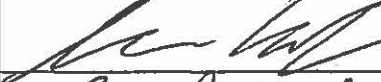


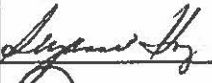
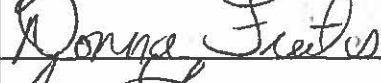


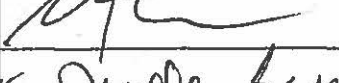

Handwritten note: "Handwritten note: 04"

STOP Hawaiian Memorial Park Expansion

Petition to Keep Oneawa Hillside as Conservation

Petition summary and background	Texas-based Service Corporation International has submitted a revised proposal to expand Hawaiian Memorial Park. The land is currently zoned in the conservation district, and we would like to keep the land's designation.
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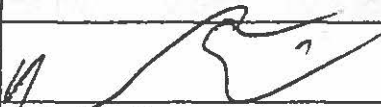
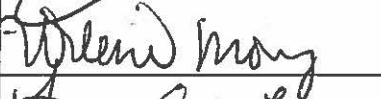
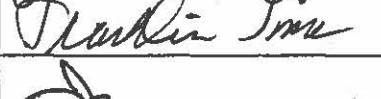
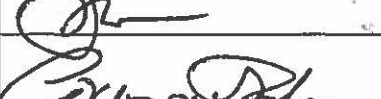
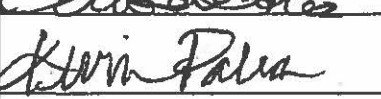
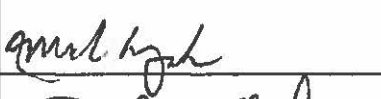
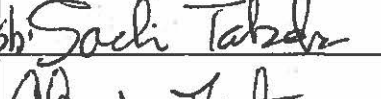
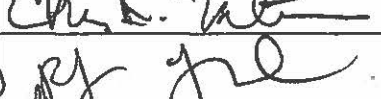
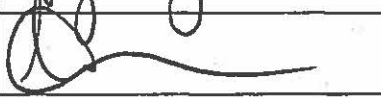
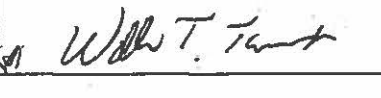

Printed Name	Signature	Address
Lee Ishiguro		94-651 Himeni
Neal Leisack		47444 Kamehameha
Carissa Yoshimori		45-464 Lipa 10 St.
Sean Coolidge		45-181 Namoku St.
Rachel Coolidge		" "
Dale Kashiwamura		47-518 Wai Pili St.
Suzanne Hira		45-604 Duna Dr.
Donna Freitas		1052 ALA MANU ST.
Geri Limores		APT. 402 730 Kaimanili
Mary Fackrell		541 Pamaele St.
Patricia 		45-215 Kanohe
Janelle Sauer		45203 WENAGA

STOP Hawaiian Memorial Park Expansion

Petition to Keep Oneawa Hillside as Conservation

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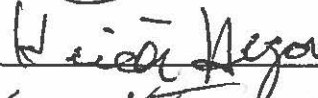
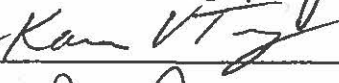

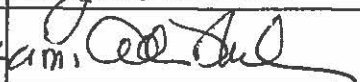

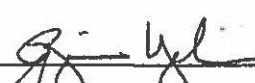

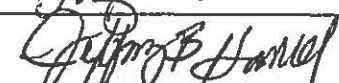
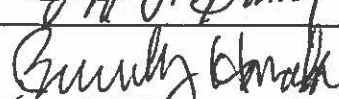
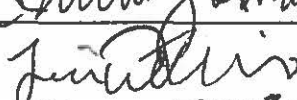

Printed Name	Signature	Address
Garry Kalua		45-176 NAMOKU ST KANEONE HI 96744
Mene Mory		45-174 NAMOKU ST KANEONE HI 96744
FRANKLIN TOMA		45-172 NAMOKU ST KANEONE HI 96744
JAMES PANA		45-164 NAMOKU ST KANEONE HI 96744
CAROL PANA		45-164 NAMOKU ST KANEONE HI 96744
KEVIN PALA		45-164 NAMOKU ST KANEONE HI 96744
ANNE LOPKIN		45-158 NAMOKU ST KANEONE HI 96744
SACHI KAKAHASHI		45-152 NAMOKU ST KANEONE HI 96744
CHRIS TATENO		45-150 NAMOKU ST
RYAN YAMAMOTO		45-148 NAMOKU ST
STON KUBO		801 South St
WILBUR TANAKA		45-144 NAMOKU ST

STOP Hawaiian Memorial Park Expansion

Petition to Keep Oneawa Hillside as Conservation

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Printed Name	Signature	Address
An/onica/celes		94-232 Aniahi Pl Kaneohe
Heidi Argo		44-391 Kilo St Kaneohe
Karen Tang		45-395 Kamehameha Kaneohe
Janice Imamura		45-335 Nakulua St Kaneohe
Aileen A. Murakami		45-480 Lipalu St. Kaneohe HI 96744
Karen Viduete		45-468 Lipalu St. Kaneohe, HI 96744
Regina Yoshimura		45-464 Lipalu St Kaneohe, HI 96744
Lynn Onions		45-461 Lipalu St Kaneohe HI 96744
JEFF HARRIS		45-171 Lipalu St Kaneohe HI 96744
Beverly Hansen		45-170 Namoku St Kaneohe HI 96744
Tiani Wongkai		45-176 Namoku St Kaneohe HI 96744
Colleen Kaina		45-176 Namoku St Kaneohe HI 96744

STOP Hawaiian Memorial Park Expansion

Petition to Keep Oneawa Hillside as Conservation

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Printed Name	Signature	Address
Moses Pestano	Moses Pestano	45-274 Mokulele Dr.
Dana Verra	Dana Verra	45-254 Mokulele Dr.
Shirley Fagan	Shirley Fagan	45-546 Natulua St
Myles Michibata	Myles Michibata	45-242 Mokulele Dr.
MICHELLE M. MARYOSE	Michelle Maryose	" "
Nicholas Heuermann	Nicholas Heuermann	45-234 Mokulele Dr.
JEAN SHIRONG	J. Shirong	45-241 Mokulele Dr.
Norman Nakagawa	Norman Nakagawa	45-263 Mokulele Dr.
POUG MOTENAGA	Poug Motenaga	45-261 Mokulele Dr.
Dudley Dicks	Dudley Dicks	45-469 Lipika St
Tiamana Aboteck	Tiamana Aboteck	45-189 Nāmoku St
Jandi Anderson	Jandi Anderson	45-189 Nāmoku St

STOP Hawaiian Memorial Park Expansion

Petition to Keep Oneawa Hillside as Conservation

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Printed Name	Signature	Address
KEVIN DAVIS	Kevin Davis	45-171 OHANA PL
LYNN L DAVIS	Lynn Davis	45-171 OHANA PL
Bernady You	Bernady You	45-172 OHANA PL
ROBERTA YOU	Roberta You	" " "
Jay Tontopine	Jay Tontopine	45-448 Ohaha St.
Neil Tontopine	Neil Tontopine	"
C. Van Winkle	C. Van Winkle	45-417 Nakulua St
Gary L Gray	Gary L Gray	45-426 Ohaha St
Corinna Gray	Corinna Gray	45-424 Ohaha St.
EAMON GRAY	Eamon Gray	45-426 OHAHAST
Leilani An	Leilani An	45-430 Ohaha St
MITCHELL CHANG	Mitchell Chang	45-431 Ohaha

STOP Hawaiian Memorial Park Expansion

Petition to Keep Oneawa Hillside as Conservation

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Printed Name	Signature	Address
GARY NELLER	<i>[Signature]</i>	221 Iliainua
URSULA RETHERFORD	<i>[Signature]</i>	42 N. Punalu
Curtis Tawana	<i>[Signature]</i>	94-401 Nui St
Anna Toney Jorg	<i>[Signature]</i>	198 Kailua Rd
Aj Jaeger	<i>[Signature]</i>	532 Pannakua Pl Kai
Max Toney	<i>[Signature]</i>	198 Kailua Rd
LINDA WONG	<i>[Signature]</i>	371 Pulea Cir
STEVE MEHLER	<i>[Signature]</i>	44-117 Kakinani Way
DIANE HARDING	<i>[Signature]</i>	167 Aiea St / Kailua
Kurti Cui	<i>[Signature]</i>	45-443 Ohaka
George Yamashiro	<i>[Signature]</i>	45-450 Ohaka St
Jerilyn Yamashiro	<i>[Signature]</i>	45-450 Ohaka St

STOP Hawaiian Memorial Park Expansion Petition to Keep Oneawa Hillside as Conservation

Petition summary and background	Texas-based Service Corporation International has submitted a revised proposal to expand Hawaiian Memorial Park. The land is currently zoned in the conservation district, and we would like to keep the land's designation.
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Petition to Keep Mahinui Hillside as Conservation Land

STOP Hawaiian Memorial Park Expansion

Petition Summary and Background

Texas-based Service Corporation International (SCI) has submitted a revised proposal to expand Hawaiian Memorial Park Cemetery. The land is currently in the Conservation District and we would like to keep the land's designation as such.

Action Petitioned for

We, the undersigned, are concerned citizens who urge our leaders to act now to keep the Mahinui Hillside (TMK: 4503301) zoned in the conservation district.

Printed Name	Signature	Address	Phone number	E-mail	Keep Me Updated
CORNEV PALABAN	<i>[Signature]</i>				
Yona Chock	<i>[Signature]</i>				
Nadia	<i>[Signature]</i>				
Tammy Lee LaBrash	<i>[Signature]</i>				
John H. Maxson	<i>[Signature]</i>				
Saeko Y. Yoshida	<i>[Signature]</i>				
LAURA CARR	<i>[Signature]</i>				

STOP Hawaiian Memorial

Park

Expansion

Printed Name	Signature	Address
ROSE WILCOX	Rose Wilcox	Pohai Nani
Stott MARY	Mary Stott	
Roberta Kiker	Roberta Kiker	
Duane Preble	Duane Preble	Pohai Nani
Sarah Preble	Sarah Preble	
Ally Thibault	Ally Thibault	684 Milokai St Kailua, HI
Georgia Bopp	Georgia Bopp	Pohai Nani
Carolyn Wilkinson	CAROLYN WILKINSON	Pohai Nani
Miki Flick	Miki Flick	Pohai Nani
Jim Dorbaugh	James E. Dorbaugh	
Pearl Johnson	Pearl Johnson	Pohai Nani
Samuel Cox	Samuel Cox	Pohai Nani

STOP Hawaiian Memorial Park Expansion

Printed Name	Signature	Address
Nancy Janczak	Nancy Janczak	Pohai Nani Apt. 901
PAT TIERNIE	PAT TIERNIE	Pohai Nani
Barbara Rippe	BR Rippe	Pohai Nani
	Johanna	
Carol Keder	Carol Keder	Pohai Nani
JIM WHITEHEAD	James Whitehead	
Patrice McArdle	Patrice McArdle	
David W. Claron	David W. Claron	
JoAnn Boggs	JoAnn W. Boggs	
Steve Boggs	ST Boggs	
Kitty O'Reilly	K.O. Reilly	Pohai Nani
MAXINE COLE	Maxine Cole	"

STOP Hawaiian Memorial Park Expansion

Printed Name	Signature	Address
ROBERT COLLE	Robert Cole	Pohai Nani
DOROTHY KAWASAKI	Dorothy Kawasaka	"
JOHN FREEMAN	John Freeman	"
MARTY CHALMERS	Marty Chalmers	"
PETER YU	Peter P. Yu	
Richard S. Miller	Richard S. Miller	Pohai Nani

EXHIBIT 3

DANA L. ALDEN

William R. Johnson, Jr. Distinguished Professor
Professor of Marketing
Chair, Department of Marketing
Shidler College of Business
University of Hawai'i
(808) 956-8565 / dalden@hawaii.edu

ACADEMIC TRAINING

- | | |
|------|---|
| 1990 | Ph.D. (International Business and Marketing)
University of Texas at Austin |
| 1984 | M.B.A
University of Hawai'i at Manoa / With Honors |
| 1977 | M.A. (Public Affairs)
UC Santa Barbara / With Honors |
| 1973 | B.A. (Environmental Studies)
UC Berkeley / Honor Student |

TEACHING INTERESTS

Marketing Research
Cross-Cultural Consumer Psychology
Healthcare Services Marketing

RESEARCH INTERESTS

Global versus local consumer cultures
Cross-cultural aspects of consumer psychology
Healthcare services decision making theory and applications

INSTRUCTIONAL EXPERIENCE

Marketing Research

Marketing Communications

International Marketing

MBA Marketing Management

MBA Marketing Management

Executive MBA Marketing Management

Vietnam Executive MBA Marketing Management

Vietnam Executive MBA Business Statistics

Health-focused Executive MBA Marketing Management

EXTRAMURAL RESEARCH GRANTS

**2011 - \$60,000 Grant from the Keck Foundation
Project: Patient-Physician Decision-Making and Culture**

**2005 - \$60,000 Grant from the HMSA Foundation
Project: Reducing Inappropriate Antibiotic Prescriptions
in Multi-Ethnic Environments**

**2002 - \$6,500 Grant from the Hawai'i Community Foundation
Project: Adolescent Reproductive Healthcare
Models of Satisfaction**

ACADEMIC AWARDS

**Dennis Ching Teaching Award 2018
Shidler College of Business**

**Professor of the Semester Award 2017
BBA Major/Elective Course**

Award for Outstanding Short Course
Society for Medical Decision Making, 2014

Shirley M. Lee Research Award
Shilder College of Business, 2013

Excellence in Global Marketing Research Award
American Marketing Association, 2007

Lead Author, Best Paper of the Year Finalist,
International Journal of Research in Marketing, 2006

UH CBA Senior Researcher of the Year Award - 2006

UH CBA Teaching Excellence Award - 2000

Dennis Ching Teaching Excellence Award - 1998

Kaizen Award for Quality Enhancement - UH CBA - 1998

Outstanding Theory Paper - Innovations in Social Marketing Conference - 1998

UH CBA Teaching Excellence Award - 1993

Outstanding Ad Hoc Reviewer of the Year - 1992
Journal of the Academy of Marketing Science

HEALTH CARE EXECUTIVE TEACHING EXPERIENCE

Intercultural Health Care Management Program, 1997 - 2019

Japanese Health Care Management Seminars
Honolulu, Tokyo, Nagoya and Kobe, 2014-2016

Hawaii' Pacific Health Program, UH CBA, 2003-2004

Taipei Physician Social Marketing Course, Johns Hopkins/UH CBA, 2002

Social Marketing, Hanoi School of Public Health, 1997/1999

Johns Hopkins/UH Winter Institute, APCED, 1999

Marketing Management, Health Care Executive MBA Program, 1998

Physician Leadership Development Program, APCED, 1996, 1997

HEALTH CARE MANAGEMENT CONSULTING

Improving the Reproductive Healthcare Capacity of the
Communal Health Centers in Khanh Hoa and Da Nang, Vietnam
Marie Stopes International, Vietnam

Branding HIV/AIDS Health Clinics Targeting Sex Workers in Bangladesh
Howard-Delafield International

Instituting the Marketing Function
The Queen's Medical Center

JOURNAL PUBLICATIONS

Google Scholar Citations: 7,626 as of October, 2019

Dolan, Hankiz, Alden, Dana L., Friend, John M., Lee, Ping Yein, Lee, Yew Kong, Ng, Chirk Jenn, Abdullah, Lim Katijah, and Trevina, Lyndal, "Culture, Self, and Medical Decision Making in Australia and China," *Medical Decision Making Policy & Practice*, forthcoming.

He, Yi; Ilyoung Ju, Qimei Chen, Dana L. Alden, Dana L; Hong Zhu, Kaiyuan Xi, "Managing negative word-of-mouth: The interplay between locus of causality and social presence," *Journal of Services Marketing*, forthcoming.

Alden, Dana L., John Friend, Liana Frankel, and Maria Jibaja-Weiss (2018), "The Effects of Culturally Targeted Patient Decision Aids on Medical Consultation Preparation for Hispanic Women in the U.S.: Results from Four Randomized Experiments," *Social Science & Medicine*, 212 (September), 17-25.

Alden, Dana L., John Friend, Ping Yein Lee, Yew Kong Lee, Lyndal Trevena, Chirk Jenn Ng, Sorapop Kiatpongson, Khatijah Lim Abdullah, Miho Tanaka, Supanida Limpongsanurak (2018), "Who Decides – Me or We? Family Involvement in Medical Decision Making in Eastern and Western Countries," *Medical Decision Making*, 38(10), 14-25.

Yi He, Miao Hu, Qimei Chen, Dana L. Alden, and Wei He (2017), "No Man is an Island: The Effect of Social Presence on Negative Word of Mouth Intention," *Customer Needs and Solutions*, 4(December), 56-67.

- Hamilton, Jada G., Sarah E. Lillie, Dana L. Alden, Dana L., Laura Scherer, Mega Oser, Christine Rini, Miho Tanaka, John Baleix, Mikki Lee Brewster, Simon Craddock Lee, Mary K. Goldstein, Robert Jacobsen, Ronald E. Myers, Brian J. Zikmund-Fisher, and Erica A. Waters (2017). "What is a good medical decision? A research agenda guided by perspectives from multiple stakeholders," *Journal of Behavioral Medicine*, 40(1), 52-68.
- Alden, Dana L., Kelley, James B., Chen, Qimei, Youn, James B. (2016). "Understanding Consumer Motivations to Interact on Brand Websites in the International Marketplace: Evidence from the U.S., China, and South Korea," *Journal of Business Research*, 69(12), 5909-5916.
- He, Yi, Qimei Chen, Dana L. Alden (2016), "Time Will Tell: Managing Post-Purchase Changes in Brand Attitude," *Journal of the Academy of Marketing Science*, 44(6), 791-805.
- Kelley, James B. and Dana L. Alden (2016), "Online Brand Community: Through the Eyes of Self-Determination Theory," *Internet Research*, 26(4), 790-808.
- Alden Dana L., John Friend, Angela Lee, Marieke De Vries, Ryosuke Osawa, and Qimei Chen (2015) "Culture and Medical Decision Making: Health Care Consumer Perspectives in Japan and the U.S.," *Health Psychology*, 34(12), 1133-1144.
- Alden, Dana L. (2014), "Decision Aid Influences on Factors Associated with Patient Empowerment Prior to a Cancer Treatment Decision Making," *Medical Decision Making*, 34 (7), 884-898.
- Alden, Dana L., John Friend, Marilyn Schapira, and Anne Stigglebout (2014), "Cultural Targeting and Tailoring of Shared Decision Making Technology: A Theoretical Framework for Improving the Effectiveness of Patient Decision Aids in Culturally Diverse Groups," *Social Science & Medicine* (105 March), 1-8.
- Chen, Qimei, Yi He, Dana L. Alden (2014), "Social Presence in Service Failure: Why It Might not be a Bad Thing," *Customer Needs and Solutions*, 1(4), 288-297.
- Alden, Dana L., John Friend and Maria Chun (2013), "Shared Decision Making and Patient / Decision Aids: Knowledge, Attitudes, and Practices Among Hawai'i Physicians," *Hawaii Journal of Medicine and Public Health*, 72(11): 396-400.
- Alden, Dana L., James B. Kelley, Petra Riefler, Julie A. Lee, and Geoffrey N. Soutar (2013), "The Effect of Global Company Animosity on Global Brand Attitudes in Emerging and Developed Markets: Does Perceived Value Matter?", *Journal of International Marketing*, 21 (2), 17-38.
- Alden, Dana L., Miwa Yamasaki Merz and Jun Akashi (2012), "Young Adult Preferences for Physician Decision-Making," *Asia-Pacific Journal of Public Health*, 24(1), 173-184.

- He, Yi, Qimei Chen and Dana L. Alden (2012), "Consumption in the Public Eye: The Influence of Social Presence on Service Experience," *Journal of Business Research*, 65(3), 302-310.
- He, Yi, Qimei Chen and Dana L. Alden (2012), "Social Presence and Service Satisfaction: The Moderating Role of Culture Value-Orientations," *Journal of Consumer Behavior*, 11(2), 170-176.
- Alden, Dana L., Miwa Yamazaki Merz and Le Minh Thi (2010), "Patient Decision-Making Preference and Physician Decision-Making Style for Contraceptive Method Choice in an Asian Culture: Does Concordance Matter?," *Health Communication*, 25(8), 718-726.
- Alden, Dana L., Yi He and Qimei Chen (2010), "Service Recommendations and Customer Evaluations in the International Marketplace: Cultural and Situational Contingencies," *Journal of Business Research*, 63(1), 38-44.
- Alden, Dana L. Alan Tice and John Berthiaume, (2010) "Impact of Cold Pack Intervention versus Education in Improving Appropriate Antibiotic Use: A Field Study," *Hawaii Medical Journal* 69(11), 260-263. (70% first author contribution)
- Chen, Qimei., He, Yi, & Alden, Dana L. (2010). The boomerang effect of self-referencing in negative health message communication. *Journal of the Academy of Business & Economics*, 10(2), 81-90.
- Anh Ngo, Dana L. Alden, Van Pham, and Ha Phan (2010), "The Impact of Social Franchising on the Use of Reproductive Health and Family Planning Services at Public Commune Health Stations in Vietnam," *BMC Health Services Research*, 10 (February), Article 54.
- Akaka, Melissa Archpru and Dana L. Alden (2010), "Global Brand Positioning and Perceptions: International Advertising and Global Consumer Culture," *International Journal of Advertising*, 29(1), 37-56.
- Alden, Dana L. and Qimei Chen (2009), "Adolescent Satisfaction with Reproductive Health Care Services: The Role of Negative Emotions," *Journal of Applied Social Psychology*, 39(9), 2023-2044.
- Ahn, D. Ngo, Dana L. Alden, Hang Nguyen and Nhuan Dinh (2009), "Developing and Launching the Government Social Franchise Model of Reproductive Healthcare Service Delivery in Vietnam," *Social Marketing Quarterly*, 15(1), 71-89.
- He, Yi, Michael Merz and Dana L. Alden (2008), "Diffusion of Measurement Invariance Assessment in International Marketing: Perspectives from the Literature and a Survey of Researchers," *Journal of International Marketing*, 16(2), 64-83.

- Merz, Michael, Yi He and Dana L. Alden (2008), "A Categorization Approach to Analyzing the Global Consumer Culture Debate," *International Marketing Review*, 25(2), 166-182.
- Polyorot, Kawpong, Dana L. Alden and Eugene Kim (2007), "Narrative versus Factual Ad Copy Effects on Recall and Brand Attitude: The Mediating Role of Message Involvement," *Psychology and Marketing*, 24(6 June), 539-554.
- Alden, Dana L., J.B. Steenkamp and Rajeev Batra (2006), "Consumer Attitudes toward Marketing Globalization: Antecedent, Consequent and Structural Factors," *International Journal of Research in Marketing*, 23, 227-239.
- Alden, Dana L., Alan Tice, and John Berthiaume (2006), "Ethnicity, Antibiotics and Patient-Physician Interactions: Towards an Effective Intervention," *Ethnicity and Disease*, 16(Winter), 268-274.
- Polyorot, Kawpong and Dana L. Alden (2005), "The Effects of Culture and Individual Difference on the Persuasiveness of Comparative Ads," *Journal of Advertising*, 34 (1), 37-48.
- Alden, Dana L., Julieta Dela Cruz and Pongsa Viboonsanti (2004), "Influences on Client Loyalty to Reproductive Healthcare Clinics in the Philippines and Thailand," *Asia-Pacific Population Journal*, 19(4 December), 9-24.
- Alden, Dana L., Do Mai Hoa and Bhawuk Dharm (2004), "Client satisfaction with reproductive health care quality: Integrating business approaches to modeling and measurement," *Social Science and Medicine*, 59 (December), 2219-2232
- Steenkamp, J.B., Rajeev Batra and Dana L. Alden (2003), "How Perceived Brand Globalness Creates Brand Value," *Journal of International Business Studies*, 34(1), 53-65.
- Alden, Dana L., Ashesh Mukerjee and Wayne D. Hoyer (2000), "The Effects of Incongruity, Surprise and Positive Moderators on Perceived Humor in Advertising," *Journal of Advertising*, (2 Summer), 1-15.
- Alden, Dana L. and Alan Cheung (2000), "Organ Donation and Ethnicity: A Subcultural Comparison," *Journal of Applied Social Psychology*, 30(2), 293-314.
- Batra, Rajeev, Venkatram Ramaswamy, Dana L. Alden, J.B. Steenkamp and S. Ramachander (2000), "Effects of Brand Local/Non-Local Origin on Consumer Attitudes," *Journal of Consumer Psychology*, 9(2), 83-95.
- Huff, Lenard and Dana L. Alden " (2000),"A Model of Managerial Response to Sales Promotions: A Four Country Analysis," *Journal of Global Marketing*, 13(3), 7-28.

- Alden, Dana L., Ashesh Mukherjee and Wayne D. Hoyer (2000), "Extending a Contrast Resolution Model of Humor in Television Advertising: The Role of Surprise," *HUMOR: International Journal of Humor Research*, 13(2), 193-217.
- Alden, Dana L., J.B. Steenkamp and Rajeev Batra (1999), "Brand Positioning Through Advertising in Asia, North America and Europe: The Role of Global Consumer Culture," *Journal of Marketing*, 63(January), 75-83.
- Huff, Lenard, Dana L. Alden and Brian Tietje (1999) "Managing Consumer Sales Promotions: Factors that Impact Use of Price and Non-Price Promotional Tools," *Journal of Promotion Management*, 5(1), 77-89.
- Cheung, Alan HS, Dana L. Alden, and Mary S. Wheeler (1999), "Cultural attitudes of Asian-Americans Toward Death Adversely Impact Organ Donation," *Transplantation Proceedings*, 30(7), 3609-3610. 9 citations, SSCI. (note: this is journal not conference proceedings)
- Alden Dana L. and Brian Tietje (1998), "Social Marketing and Sales Promotion: A Test of Emerging Theory for "Maintenance Stage" Consumers," *Social Marketing Quarterly*, 4(4 Summer), 83-92.
- Huff, Lenard and Dana L. Alden (1998), "An Investigation of Consumer Response to Sales Promotion in Developing Markets: A Three-Country Analysis," *Journal of Advertising Research*, 38 (3 May-June), 47-57.
- Alden, Dana L. and Drew Martin (1995), "Humorous Advertising in Japan and the United States: A Cross-Cultural Comparison," *Journal of Global Marketing*, 9(1), 121-142.
- Alden, Dana L., Wayne D. Hoyer, Chol Lee and Guntalee Wechasara (1995), "The Use of Humor in Asian and Western Television Advertising: A Four Country Comparison," *Journal of Asia Pacific Business*, 1 (2), 3-23.
- Alden, Dana L. and Ayn Crowley (1995), "Improving the Effectiveness of Condom Advertising: A Research Note," *Health Marketing Quarterly*, 12 (4), 25-38.
- Alden, Dana L. and Ayn Crowley (1995), "Sex Guilt and Receptivity to Condom Advertising," *Journal of Applied Social Psychology*, 25 (16), 1446.
- Alden, Dana L., Douglas M. Stayman and Wayne D. Hoyer (1994), "The Evaluation Strategies of American & Thai Consumers: A Cross-Cultural Comparison," *Psychology and Marketing*, 11 (2 March), 145-162.
- Alden, Dana L., Wayne D. Hoyer and Chol Lee (1993), "Identifying Global and Culture-Specific Dimensions of Humor in Advertising: A Multinational Analysis," *Journal of Marketing*, 57 (2), 64-75.

- Alden, Dana L. and Wayne D. Hoyer (1993), "An Investigation of Cognitive Factors Related to Humorousness in Television Advertising," *Journal of Advertising*, 22 (2), 29-37.
- Alden, Dana L. (1993), "Perceived Risk and New Product Trial: The Effects of Country-of-Origin," *Journal of International Consumer Marketing*, 6 (1), 7-26.
- Stayman, Douglas, Dana L. Alden and Karen H. Smith (1992), "Some Effects of Schematic Processing on Consumer Expectations and Disconfirmation Judgements," *Journal of Consumer Research*, 19 (2), 240-255.
- Yang, Yoo, Robert P. Leone and Dana L. Alden (1991), "Identifying Potential and Latent Exporters: A Market Expansion Ability Approach," *Journal of Marketing*, 56 (1), 84-96.
- Gillespie, Kate and Dana L. Alden (1989), "Consumer Export Markets in Liberalizing LDC's: A Life-Cycle Approach," *Journal of International Business Studies*, 20 (1), 93-112.
- Green, Robert T. and Dana L. Alden (1988), "Functional Equivalence in Cross Cultural Consumer Behavior: The Case of Gift Giving in Japan," *Psychology and Marketing*, 5 (2), 159-172.
- Peterson, Robert A., Dana L. Alden, Mustafa O. Attir and Alain J.P. Jolibert (1988), "Husband-Wife Report Disagreement: A Cross-National Investigation," *International Journal of Research in Marketing*, 5, 125-136.

SCHOLARLY BOOK CHAPTERS

- Alden, Dana L., Michael Basil and Sameer Deshpande, "An Overview of Integrated Social Marketing Communications," *Sage Handbook on Social Marketing*, 2010. Peer reviewed.
- Merz, Michael, Dana L. Alden, Wayne Hoyer and Kalpesh Desai (2008), "Brand Extension Research: A Cross-Cultural Perspective," *Review of Marketing Research*, Maresh K. Malhotra, Editor, Armonk, NY: M.E. Sharpe. Peer reviewed.

EXAMPLES OF RESEARCH IN PROGRESS

Brand Relationship Management Stream

- Qimei Chen, Ange Nariswari, Dana L. Alden, "The Consequences of Trying: Voting Outcomes and Negational Identification," in progress.

Health Care Management Stream Under Review

Joaquin Michel, Jorge Ballon, Sarah Connor, David C. Johnson, Jonathan Bergman MD, 1,2 Mark S. Litwin, Christopher S. Saigal, Dana L. Alden,* "Improving Shared Decision Making in Latino Men with Prostate Cancer: A Thematic Analysis, under 1st review, *Medical Decision Making Policy & Practice*

*Note, following medical publication practice, senior supervising author is placed last.

In Progress 2019-2020 (Health Care and Marketing Sustainability Streams)

Friend, John. M., Dana L. Alden, Logan Trenaman, "Does Gender Targeting Matter? Assessing the Effectiveness of a Sports Team Metaphor in a Sleep Apnea Decision Aid," manuscript to be submitted to *Health Psychology* by December, 2019.

Friend, John M. and Dana L. Alden, "Cross-Cultural Analysis of Patient Confidence in Advance Directive Decision Making: Findings from Japan and the United States," manuscript to be submitted to *Medical Decision Making* by December, 2019.

Sakawrat, Kituakul, Jaisang Kim, and Dana L. Alden, "Increasing the Use of Biodegradable Packaging in Fast Food Restaurants," manuscript to be submitted to the *Journal of Public Policy & Marketing* by February, 2020.

Sakawrat, Kituakul, Dana L. Alden, and Raphael Gotlieb, "Improving Patient Outcomes Through Interactive Decision Tool Technology: A Comparison of Compensatory, Non-Compensatory, and Free Flow Formats," manuscript to be submitted to a leading journal in health sciences research by February, 2020.

Friend, John and Dana L. Alden, "A Review of the Impact of Academic Marketing Research on Public Policy," manuscript to be submitted to the *Journal of Public Policy & Marketing* by August, 2020.

Ehring, Oystein, Dana L. Alden, Sara Heckler, Kelly Holden, and Harry Nguyen, "Implementation of a Health Optimization Monitoring System for Bipolar Disorder Patients," multiple manuscripts expected, to be submitted to leading journals in health sciences research by Fall, 2020. (project with John A. Burns School of Medicine).

Munz, Kurt, Chiara Longoni, Dana L. Alden, "Medical Decision Making with Audio versus Printed Information Support: An Investigation of Cognitive Processes and Potential Biases," manuscript to be submitted by December, 2020.

PROCEEDINGS PUBLICATIONS, CONFERENCE ABSTRACTS, POSTERS
(Oral Presentation Unless Noted)

- Friend, John and Alden, Dana (2017), "Advanced Directives and Culture: Japan versus the US, presented by co-author, Dr. John Friend, at the Society for Medical Decision Making Annual Meeting, Pittsburgh, PA, October 24, 2017.
- Alden, Dana L., Friend, John, Fraenkel, Liana, and Jibaja-Weiss, Maria (2016), "Culture and Decision Support Tool Adaptation: Results from Randomized Controlled Trials," presented at the Society for Medical Decision Making Annual Meeting, Vancouver, CA (poster).
- Alden, Dana L. and the Asia Pacific Shared Decision Making Collaboration (2015), "Identifying Cultural Influences on Patients' Desired Levels of Participation in Medical Decision Making: A Multicultural Investigation," (abstract), Society for Medical Decision Making, St. Louis, Missouri (poster).
- Alden, Dana L. (2014), "Decision Aid Influences on Patient Empowerment Prior to a Cancer Treatment Decision Making Consultation," (abstract) Society for Medical Decision Making, Antwerp, Belgium.
- Alden, Dana L. and Qimei Chen (2012), "Building a Theory-Based Network of Antecedent Mediators and Consequences of Patient Decision Aid Exposure," (abstract) Society for Medical Decision Making, European Meeting, Oslo, Norway.
- He, Yi, Qimei Chen and Dana L. Alden (2011), "Untangling Social Presence Effects on Customer Reactions to Service Failure," (abstract) Proceedings in 2011 AMA Summer Educators' Conference, San Francisco, CA.
- He, Yi, Qimei Chen and Dana L. Alden (2011), "Social Presence and Service Satisfaction: The Role of Independent Self-Construction," (abstract) Proceedings in 2011 AMA Winter Educators' Conference, Austin, Texas.
- He, Yi, Qimei Chen and Dana L. Alden (2010), "Verbalizing or Visualizing Metaphors? The Moderating Effects of Processing Mode and Temporal Orientation," (abstract) Advances in Consumer Research.
- He, Yi, Qimei Chen and Dana L. Alden (2010), "The More the Merrier: Imagined Social Presence and Service Failure," (abstract) Advances in Consumer Research.
- He, Yi, Qimei Chen and Dana L. Alden, (2009) "Future or Present: The Effect of Cultural Priming on Metaphoric Appeals," (abstract) Proceedings in American Academy of Advertising 2009 Asian-Pacific Conference, Beijing, China.

He Yi, Qimei Chen and Dana L. Alden (2008), "Bystanders Don't Just Stand By: The Influence of Social Presence on Service Experience," Association for Consumer Research.

He Yi, Michael Merz, and Dana L. Alden (2007), "The Application of Measurement Invariance Tests in Cross-National Marketing Research: A Critical Assessment," Association for Consumer Research.

Michael Merz, Yi He and Dana L. Alden (2006), "The Global Standardization Debate: A Categorization Perspective," Abstract, *Association for Consumer Research Asia Proceedings*.

Alden, Dana L., Alan Tice and John Berthiaume (2005), "'Improving antibiotic knowledge and attitudes among Asian Americans: Effectiveness of cold pack plus education versus education alone," *American Public Health Association Annual Meeting Proceedings*, December, 2005: Philadelphia.

Polyorot, Kawpong, Eugene Kim and Dana L. Alden (2003), "Shortening the Gudykunst High-Low Context Communication Style Measure," *European Advances in Consumer Research*, 6, Association for Consumer Research, Valdosta, GA.

Polyorot, Kawpong, Eugene Kim and Dana L. Alden (2002), "The Effect of Communication Styles on Consumer Miscomprehension of Print Advertisements," *Advances in Consumer Research*, Vol. 29, Association for Consumer Research: Valdosta State University, Valdosta, GA, p. 234.

Alden, Dana L., Bhawuk Dharm, Stephen Holden and Steven A. Taylor (1999), "Toward a Model of Satisfaction Processing in Social Marketing: The Role of Knowledge among Maintenance Stage Consumers," *Social Marketing Quarterly*, 5(3 September), 17-24.

Huff, Lenard C. and Dana L. Alden (1999), "An Investigation of Consumer Response to Sales Promotions in Developing Markets: A Three-Country Analysis," *Advances in Consumer Research*, Vol. 26, Association for Consumer Research: Valdosta, GA, pp. 41-42.

Alden, Dana L., Ashesh Mukerjee and Wayne D. Hoyer (1998), "The Generation of Humor in Advertising: Surprise!," *Proceedings of the 1998 Winter Conference of the Society for Consumer Psychology*, Margaret C. Campbell and Karen A. Machleit (eds.), Society for Consumer Psychology, 158.

Cheung, Alan, Dana L. Alden and Mary S. Wheeler (1998), "Cultural Attitudes of Asian Americans Toward Death Adversely Impact Organ Donation," *Transplantation Proceedings*, 30(7), Enrique T. Ona, Marieta B. De Luna, Claver B. Ramos, Libertad N. Rosales (eds.), NY, NY: Elsevier Science Inc., 3609-3610.

Alden, Dana L., J.B. Steenkamp and Rajeev Batra (1995), "Global Culture Brand Positioning in Television Advertising in Asia, Europe and the US: Real or Imagined?", *European Advances in Consumer Research*, Vol. 2, Flemming Hansen (ed.), Association for Consumer Research, 1.

Alden, Dana L., Wayne D. Hoyer and Ayn Crowley (1993), "Country-of-Origin, Perceived Risk and Evaluation Strategy," *Advances in Consumer Research*, Vol. 20, Leigh McAlister and Michael L. Rothschild (eds.), Association for Consumer Research, 119-126.

Alden, Dana L., Wayne D. Hoyer and Guntalee Wechasara (1988), "Consumer Choice Strategies and Involvement: A Cross-Cultural Analysis," *Advances in Consumer Research*, Vol. 16, Thomas K. Srull (ed.), Association for Consumer Research, 678-683.

Alden, Dana L. and Kate Gillespie (1986), "A Cross-National Model of Channel Behavior: Japan and the United States," *Proceedings of the Academy of International Business*, Southeast Regional Conference, (June), 798-807.

ACADEMIC PRESENTATIONS

"Using Multi-Group Structural Equation Modeling and Advanced Mediation Analysis in Medical Decision Making Research," presented at the Society for Medical Decision Making Annual Meeting, Portland, Oregon, October, 2019.

"Shared Decision Making and Decision Support Tools in Today's Clinical Practice," presented to Grand Rounds, John A. Burns School of Medicine, November 8, 2017.

"Using Multi-Group Structural Equation Modeling and Advanced Mediation Analysis in Medical Decision Making Research," presented at the Society for Medical Decision Making Annual Meeting, Pittsburgh, Pennsylvania, October, 2017.

"Culture and Decision Support Tool Adaptation: Results from Randomized Controlled Trials," presented to Shidler PhD Students, Fall, 2016.

"Using Multi-Group Structural Equation Modeling and Advanced Mediation Analysis in Medical Decision Making Research," with Qimei Chen, presented at the *International Shared Decision Making Conference 2015*, Sydney, Australia, July, 2015.

"Shared Decision Making & Patient Decision Aids in Diverse Patient Populations: Applying the Latest Innovations in Cultural Targeting and Tailoring in Your Health Care Practice," with Maria Jibaja-Weiss, and Chirk Jen Ng, Plenary Address, Cross-Cultural Health Care Conference, *John A. Burns School of Medicine*, Honolulu, HI, USA, January, 2015

"Using Multi-Group Structural Equation Modeling and Advanced Mediation Analysis in Medical Decision Making Research," with Qimei Chen, presented at the *Society for Medical Decision Making*, Annual Meeting, Miami, Florida, USA October, 2014.

"Culture and Patient-Centered Decision Making Among Diverse Populations," with Miho Tanaka, Masa Jimbo, Robert Volk, presented at the *Society for Medical Decision Making*, Annual Meeting, Miami, Florida, USA October, 2014.

"Using Multi-Group Structural Equation Modeling and Advanced Mediation Analysis in Medical Decision Making Research," with Qimei Chen, presented at the *Society for Medical Decision Making*, Antwerp, Belgium, June, 2014.

"Decision Aid Influences on Patient Empowerment Prior to a Cancer Treatment Decision Making Consultation," presented at the *Society for Medical Decision Making*, Antwerp, Belgium, June, 2014.

"Developing and Implementing Effective Models of Patient Centered Care in the Culturally Diverse and/or Resource Challenged Environments of the Asia-Pacific Region," Plenary Session, Organized by Professor Alden, with Lyndal Trevena, Anne Stiggelbout, CJ Ng, and Somsak Chunhara presented at the *Society for Medical Decision Making Meeting*, Singapore, January, 2014.

"Introduction to Shared Decision Making Communications and Decision Support Technologies in Diverse Cultural Environments," presented at the *Society for Medical Decision Making Meeting*, with Lyndal Trevena, Anne Stiggelbout, and Marilyn Schapira., Singapore, January, 2014.

"The Importance of Considering Cultural Values in Design of Cancer Screening Patient Decision Aids," with Angela Lee and Qimei Chen, presented at the *3rd International Shared Decision Making Conference*, Lima, Peru, June, 2013.

"Cultural Value Effects on Patient Preferences for Participation in Medical Decision Making," with Marieke De Vries and Ryosuke Osawa, presented at the *3rd International Shared Decision Making Conference*, Lima, Peru, June, 2013.

"Shared Decision Making and Decision Aids: The Importance of Cultural Tailoring," Plenary Session Address with Dr. Jeff Belkora at the *Culture and Medicine Conference*, Honolulu, Hawaii, February, 2013

"Shared Decision Making and Decision Aids: The Importance of Cultural Tailoring," with John Friend, presented at the *Society for Medical Decision Making*, Phoenix, Arizona, October, 2012.

"Building a Theory-Based Network of Antecedent Mediators and Consequences of Patient Decision Aid Exposure," with Qimei Chen, presented at the *Society for Medical Decision Making*, Oslo, Norway, June, 2012.

"Introduction to Shared Decision Making and Decision Aids: The Importance of Cultural Tailoring," presented at the *Society for Medical Decision Making*, Oslo, Norway, June 2012.

"Giving versus Getting Help: The Moderating Effects of a Patient Decision Aid," with Qimei Chen and Jennifer Aaker. presented at the *International Society for Medical Decision-Making Meeting*, June, 2011.

"Building Global Brand Communities: The Case of China," with Qimei Chen and Xin Zhao, to be presented at the *Academy of Marketing Science Meeting*, July, 2011.

"Brand Meaning Management during International Expansion: An Emerging Market Perspective," with Ange Nariswari, to be presented at the *Academy of Marketing Science Meeting*, July, 2011.

"Untangling Social Presence Effects on Customer Reactions to Service Failure," with Yi He and Qimei Chen, " to be presented at *AMA Summer Educators' Conference*, San Francisco, CA, August, 2011.

"Social Presence and Service Satisfaction: The Role of Independent Self-Construal," with Yi He and Qiemi Chen, presented at *AMA Winter Educators' Conference*, Austin, Texas, February, 2011.

"Building Global Brand Communities: Consumer Practices and Creolization," with Xin Zhao and Qimei Chen, presented at the University of Texas San Antonio, Marketing Faculty and PhD Student Symposium, October 22, 2010.

"The Creolization of Global Brands," with Rajeev Batra and Xin Zhao, presented at the *Global Branding Conference*, Istanbul, Turkey, June, 2010.

"The Nicodemon is Stealing You Blind!" The Effects of Concrete versus Abstract Metaphor on Healthful Persuasion," with Yi He and Qimei Chen, presented at the *American Academy of Advertising, Asian Conference*, Beijing, China, May, 2009.

"Verbalizing or Visualizing Metaphors? The Moderating Effects of Processing Mode and Temporal Orientation," with Yi He and Qimei Chen, presented at the *Association of Consumer Research Conference*, Pittsburg, October 2009.

"The More the Merrier: Imagined Social Presence and Service Failure," with Yi He and Qimei Chen, presented at the *Association of Consumer Research Conference*, Pittsburg, October 2009.

"Impacts of a Government Social Franchise Model of Service Utilization and Client Satisfaction at Commune Health Stations in Vietnam," Anh Ngo, presenting, *Asia-Pacific Academic Consortium for Public Health*, 2009 Conference, Taipei, Taiwan.

"Developing and Launching the Government Social Franchise Model for Reproductive Healthcare in Vietnam," *World Social Marketing Conference*, Brighton, UK, September, 2008.

"Integrating Social Normative Antecedents in Customer Satisfaction Models: Situational and Cultural Influences," *AMA Summer Marketing Educators' Conference*, Chicago, August, 2006.

Alden, Dana L., Alan Tice and John Berthiaume (2005), "'Improving antibiotic knowledge and attitudes among Asian Americans: Effectiveness of cold pack plus education versus education alone," *American Public Health Association Annual Meeting Proceedings*, December, 2005: Philadelphia.

"Global Brand Positioning and Advertising Effectiveness: Does Acculturation to Global Consumer Culture Make a Difference?" *American Marketing Association Educator's Meeting*, San Francisco, California, August, 1999.

"Toward a Model of Satisfaction Processing in Social Marketing: The Role of Knowledge among Maintenance Stage Consumers," *5th Annual Innovations in Social Marketing Conference*, Montreal, Canada, July, 1999.

"Social Marketing and Sales Promotion: A Test of Emerging Theory for "Maintenance Stage" Consumers," *4th Annual Innovations in Social Marketing Conference*, Washington, D.C., June, 1998; awarded Best Theory Paper.

"Consumer Response to Sale Promotion in Three Countries," *Association for Consumer Research, Annual Meeting*, 1998, Montreal; presented by co-author, Lenard Huff.

"The Generation of Humor in Advertising: Surprise!", presented to *the Society for Consumer Psychology Annual Meeting*, Austin, TX, February, 1998.

"Marketing Hawaii as a Brand: The Role of Brand Equity," presented to *the Hawaii Society of Corporate Planners*, Fall, 1997.

"Global Consumer Culture Positioning: A New Approach to Strategic Brand Management," presented as part of the *Pacific Asian Management Institute's Summer PALS Lecture Series*, Summer, 1996.

"The Role of Culture in Global Brand Positioning," presented at the international meeting of the *Association of Consumer Research, Summer 1995*, Copenhagen, Denmark.

"Humor in Advertising: A Four Nation Study," presented at the international meeting of the *Association of Consumer Research, Summer, 1992*, Amsterdam, The Netherlands.

ACADEMIC AND COMMUNITY SERVICE

Chair, Department of Marketing, Shidler College of Business, 2016 to present.

Newsletter Editor, Society for Medical Decision Making, 2015 to 2018.

Interest Group Chair, Society for Medical Decision Making, 2015 to present.

Shidler College of Business Curriculum Committee Chair, University of Hawaii, 2015-present.

PhD Program Advisory Committee Chair, Shidler College of Business, University of Hawaii, Fall, 2013-2015.

Faculty Director, DL-EMBA Health Care Management Program, Shidler College of Business, University of Hawaii, Summer, 2014 – Present.

Planning Committee, SMDM Asia Pacific Conference, 2014.

Editorial Review Board Member, *Medical Decision Making*, 2015- present

Editorial Review Board Member, *International Marketing Review*, 2007- 2012.

Editorial Review Board Member, *Journal of International Marketing*, 2007 to 2017.

Editorial Review Board Member, *Journal of Business Research*, 2006-2014.

Editorial Review Board Member, *International Journal of Research in Marketing*, 2008-2011.

Editorial Review Board Member, *Social Marketing Quarterly*, 2003- 2013.

Ad Hoc Reviewer: *Journal of Consumer Research*, *Journal of Marketing*, *Journal of Advertising*, *Journal of Health Communication*, *Journal of Participatory Medicine*, *Journal of Asia Pacific Public Health*, *Journal of International Business Studies*, *Medical Decision Making*

Scientific Committee Member, *Society for Medical Decision Making*, European Meeting, Summer, 2012.

Reviewer, *SMDM Annual Meeting*, Fall, 2102 -2017.

Reviewer, *ISDM Bi-Annual Meeting*, Summer 2013

Member, Scientific Committee, *Culture and Medicine Conference*, Spring 2013

Ph.D. Dissertation Committee Member, Jan Loos, CIS, UHM 2019

Ph.D. Dissertation Committee Member, Kelly Holden, CIS, UHM 2019

Ph.D. Dissertation Committee Co-Chair, Sakawra “Gift” Kituakul, Marketing, UHM 2019

Ph.D. Dissertation Committee Member, Jaisang Kim, Marketing, UHM, 2019

Member, Planning Committee, *SMDM Asia-Pacific Meeting*, January 2014

UH Manoa TPRC Committee Chair, Spring, 2012

Dissertation Committee Member, Attila Pohlmann, PhD Candidate, IM, UHM, 2012-13.

Dissertation Committee Member, Maggie Ward, PhD Candidate, Nursing, UHM, 2012-13.

Senior Honors Thesis Advisor, Vanessa Hanao, UHM, 2012-2013.

Faculty Director, Shidler College of Business, UHM MBA Program, Fall, 2009-Summer, 2010.

Special Session Reviewer, *Association for Consumer Research Annual Conference*, Fall, 2009.

International Marketing Track Chair, *Academy of Marketing Sciences Annual Conference*, 2007-2008. Luke Chair Review Committee Member, 2008-2010

Reviewer, *Handbook of International Marketing*, Michael Kotabe and Kris Helsen, Eds., Sage Press, 2008.

Ph.D. Dissertation Co-Chair for Michael Merz, Shidler College of Business, UHM, 2009.

Ph.D. Dissertation Co-Chair for Yi He, Shidler College of Business, UHM, 2009.

Faculty Director, UH CBA Vietnam MBA Program - Hanoi, September, 2003 to 2007,

Member, AMA Marketer of the Year Selection Committee, April, 2007.

Member, UH CBA MBA Future Make-Over Committee, Fall, 2005.

Member, Board of Directors, Planned Parenthood of Hawaii (2000-2006).

Chair, Department of Marketing Personnel Committee, Fall, 2005/Spring 2006.

Member, UH CBA, Research Fund Development and Award Committee, November, 2004 - 2007.

Member, CIBER Grant Proposal Review and Award Committee, November, 2004.

Chair, Department of Marketing, UH CBA, Jan. 1996 to June 2002.

Ph.D. Dissertation Chair, Eugene Kim, UHM, 2004.

Ph.D. Dissertation Chair, Kawpong Poloyorot, UHM, 2003.

Member, Ad Hoc Ph.D. Program Revision Committee, CBA, UH Maona, February-March, 2002.

Member, Dissertation Committee, Mauricio Featherman, Communication and Information Sciences, *Evaluative Criteria and User Acceptance of Internet-based Financial Transaction Processing Systems*, May, 2002.

Reviewer, Special Issue on Social Marketing, *Journal of Public Policy and Marketing*, 2001.

Steering Committee Member, *7th Annual Innovations in Social Marketing Conference 2001*.

Program Chair, *6th Annual Innovations in Social Marketing Conference*, Washington, D.C., June, 2000.

Editorial Board Member, *Journal of the Academy of Marketing Science*, 1995 to 1997.

Program Chair, *3rd Annual Innovations in Social Marketing Conference*, Boston, Massachusetts, May, 1997.

Editorial Board Member, *Journal of International Consumer Marketing*, 1993 to 1996.

Ad Hoc Reviewer, *Journal of the Academy of Marketing Science*, 1991 to 1994.

Chair, Department of Marketing, December, 1995 to July, 2002.

Director, Marketing Information Technology Center, UH CBA, 1996 to present.

Southeast Asia Studies Curriculum Committee, University of Hawai'i, 1990 to 1993.

Athletic Advisory Board Member, UH Athletics Program, 1992 to 1995.

Honors Council Reader, University of Hawai'i, 1990 to present.

UH Doctoral Dissertation Outside Committee Member: Psychology, Nadine Shigezawa.

Marketing Consultant, Pacific Business Center, University of Hawaii, 1992 to 2002.

Thai Studies Committee Member, University of Hawai'i, 1989 to 1992.

Reviewer, AMA Winter Educators Conference, January, 2005 Reviewer, Steering Committee

Member, *7th Annual Innovations in Social Marketing Conference 2001*, Washington D.C., June 2001.

Reviewer, American Marketing Association, Winter Meeting, 2001.

Reviewer, *Advances in Consumer Research Annual Conference*, 2001, Association for Consumer Research, October 2001.

Reviewer, *American Marketing Association*, Winter Meeting, 1999, 2000.

Reviewer, *Society for Consumer Psychology Annual Meeting*, 2000.

Reviewer, *American Marketing Association*, Summer Meeting, 1999.

Reviewer, *5th Innovations in Social Marketing Conference*, Washington, D.C., July 1999.

Reviewer, *Association for Consumer Research Annual Meeting*, October, 1998.

Reviewer, *4th Innovations in Social Marketing Conference*, Washington, D.C., June, 1998.

Reviewer, *Public Policy and Marketing Conference*, 1998.

Reviewer, *Association for Consumer Research*, Asia Conference, 1998.

Advisor, Collegiate Chapter, *American Marketing Association*, University of Hawai'i, 1992-1994.

Discussant, *Beyond Satisfaction Conference*, Co-sponsored by IC² and the University of Texas at Austin, March, 1992.

Reviewer, 1992 *American Marketing Association*, Winter Educators Conference, Global Marketing Track.

Reviewer, *International Symposium on Pacific Asian Business*, Sponsored by PAMI & AIB, PAC Region, 1992.

Reviewer, 1992 *American Marketing Association*, Summer Educators Conference, Global Marketing Track.

Reviewer, 1992 *Association for Consumer Research Annual Meeting*.

Reviewer, *International Symposium on Pacific Asian Business*, Sponsored by PAMI & AIB PAC Region, 1991.

Reviewer, *Fifth Bi-Annual World Marketing Congress*, Copenhagen, Denmark, 1991.

Reviewer, 1991 *Academy of International Business Annual Meeting*.

Chair, Research Session, *2nd Annual Global Marketing Conference: The Japanese Distribution System*, American Marketing Association, Honolulu, Hawai'i, 1991.

Panelist, *State Department of Public Health Conference on Smoking and Teens*, Honolulu, Dec. 1994.

HONORARY ASSOCIATIONS

*Beta Gamma Sigma Honorary Business Fraternity
Mu Kappa Tau Honorary Marketing Society*

PROFESSIONAL ASSOCIATIONS

*Society for Medical Decision Making
American Marketing Association*

EXHIBIT 4

Winston Welch
Executive Director – Outdoor Circle

Overview of Outdoor Circle

The Outdoor Circle is a statewide environmental non-profit that works with branches throughout the Hawaiian Islands to protect Hawai'i's unique natural beauty for future generations through community improvement projects, public education, and advocacy.

Position Information

Joined in October of 2015 as Executive Director, where I regularly focus on advocacy in issues concerning view planes, green spaces, sustainability issues, and other issues related to TOC mission.

Executive Director at The Outdoor Circle Responsibilities

SUMMARY

- This position is responsible for leading and directing the efforts of TOC's to develop and mobilize the resources and membership of the organization in the fulfillment of its vision and mission.

ORGANIZATIONAL STATUS

- As the senior staff position within TOC, the ED is responsible for the strategic leadership in concert with the Board of Directors of the organization to ensure its future relevance, credibility, and viability.
- The ED is responsible for continually pursuing the aims and goals of the organization as defined by the Board of Directors, reports directly to the Board, and acts as a liaison between any staff, volunteers, and the Board.

ROLES AND RESPONSIBILITIES

- **Working Relationships**
 - Actively facilitates collaboration and partnerships by involving members, the broader community, government officials, private developers, and foundations, and by promoting participation, volunteerism, and philanthropy.
 - Works directly with government officials, community leaders, legislative leaders, and major donors to promote the vision and mission of TOC.
 - Works directly with the Board of Directors to develop policies and strategies in support of the mission of TOC.
- **Organizational Management**
 - Administrative:**
 - Oversees and maintains TOC 501c3 compliance.

- Reviews existing procedures and seeks new opportunities to improve organizational and financial operations, efficiency, and effectiveness.
- Guides, directs, and sets priorities and objectives for any staff or volunteers to ensure the effectiveness of major programs and initiatives.
- Manages the human resources of the organization including day to day operations, and hiring, directing, and evaluating and/or firing any employees, in accordance with federal and State laws and regulations.
- Hires outside contractors at the discretion of the Board.

Financial:

- Implements financial management policies established by the Board of Directors, but should follow generally accepted "Best Practices."
- Conducts monthly review of financials, and yearly review and generation of TOC budget, with TOC Bookkeeper, Accountant, Auditor and Board of Directors' Treasurer.
- With guidance from the Board of Directors, develops strategies to achieve long-term financial stability through conservative fiscal management.

Board of Directors and Committee Support:

- Supports the efforts of the Committees of TOC to accomplish the mission of the organization by working closely with the Board of Directors, communicating with Committee Chairs, and attending Committee functions as appropriate.
- Facilitates the work of the committees of the Board.
- Attends and participates in Board meetings and General Membership meeting as Ex-Officio Board Member.
- Apprises the Board of any staff activity at Board meetings.

● **Advocacy**

- Advises the Board of Directors about issues directly related to the vision and mission of TOC and supports the Board in its determination of positions to be taken by TOC as a statewide organization.
- Represents the position of TOC at legislative sessions and hearings of the State Legislature and of the city councils of the various counties in Hawaii as needed.
- Represents the position of The Board of Directors at meetings with community, corporate and private organizations, whose actions might impact the organization and its goals.
- Promotes TOC to local, regional, national and international communities as appropriate.
- Promotes TOC through written articles for the media, personal appearances at local and national conferences, and on radio and TV.

● **Fund-Raising**

- Works with board on long-term vision necessary to significantly increase the organization's visibility in its fund-raising initiatives.
- Works with board on developing new initiatives to ensure appropriate resources to support programs through fundraising and/or by building endowment funds, and through grant solicitation.

- Works with board to identify, involve, educate, and cultivate TOC's corporate and individual major prospects.
- Works with board to solicit major individual and corporate donors.
- Collaborates with the Board of Directors Development Director in formulating and implementing strategies, timelines, and goals to ensure successful fund-raising campaigns.
- **Decision Making**
 - Exercises judgment in researching, organizing, analyzing and presenting information to assist the Board of Directors in setting organizational policies and strategies consistent with the vision and mission of the organization.
 - Exercises judgment in communicating recommendations and proposals to the Board, indicating alternative solutions and their implications.
 - Ability to juggle sometimes competing agendas and conflicting ideas

EXHIBIT 5

Nathan Yuen

Background & Experience

I have been a member of Sierra Club since 2017 and have been the conservation chair for the Hawaii Chapter of the Sierra Club since 2017.

I have an undergraduate degree in Accounting and Management Information Systems from the University of Hawaii, and a Masters Degree in Business Administration from Hawaii Pacific University.

For the past 25 years I have been hiking to remote parts of the Hawaiian Islands to photograph the native plants and animals of our islands many of which are rare or endangered. I have been active in the Hawaiian Trail and Mountain Club and the Sierra Club of Hawaii for the past 25 years. I have a blog – HawaiianForest.Com – which documents some of the rarest plants and animals on the planet and have been posting photos to social media since 2011 to raise awareness of the amazing creatures found nowhere else in the world.

I am known and visible to many in the community, I am asked to help identify and review native plants and animals. This past summer, when the Mauna Kea protectors at Pu'u Huluhulu were accused of killing the rare and endangered Anunu vine – *Sicyos macrophyllus* – by the Department of Land and Natural Resources, I was called by the Kanaka Rangers to assist in finding the plant. I helped to confirm that the plant is still there and continues to thrive in the tree sanctuary of 'u Huluhulu.

EXHIBIT 6

DR. STEVEN BUSINGER, Ph.D., C.C.M.

Hawaii Weather Consulting

4837 Sierra Dr.

Honolulu, Hawaii 96816

(808) 429-7251

email: businger@hawaii.edu



Education:

Ph.D., Atmospheric Sciences, from University of Washington, 1986

M.S., Astro-Geophysics, from University of Colorado, 1978

B.S., Atmospheric Sciences, from University of Washington, 1975 cum laude

Certification: Certified Consulting Meteorologist (C.C.M. Certificate #511) by the American Meteorological Society.

Expertise

Expertise in meteorology and oceanography, numerical weather prediction, wind and solar power resource assessment, and pollution dispersion.

Professional Experience:

- 1999 – Professor and Chair, Department of Atmospheric Sciences, University of Hawaii
- 1993-98 Associate Professor, Department of Atmospheric Sciences, University of Hawaii
- 1992-93 Associate Professor, Department of Marine, Earth and Atmospheric Sciences, North Carolina State University (NCSU)
- 1986-92 Assistant Professor, Department of Marine, Earth and Atmospheric Sciences, NCSU
- 1982-86 Research Assistant, University of Washington
- 1980-85 Meteorology Instructor, University of Washington and Bellevue Community College
- 1978-82 Avalanche/Mountain Weather Forecaster, U. S. Forest Service

Publications:

More than 100 peer reviewed technical articles in professional journals on various topics including midlatitude cyclones, severe storms, flash flooding, hurricanes, acid rain, atmospheric pollution dispersion and satellite data assimilation in weather forecasting.

Funded Research:

Awards for funded research projects from NSF, ONR, EPA, NOAA, etc., totaling > \$12 million.

Honors and Affiliations: Fellow of the American Meteorological Society, American Association for the Advancement of Science, Recipient of UH Mānoa Chancellor's Citation for Meritorious Teaching in 2011, Sigma Xi, American Geophysical Union, Phi Beta Kappa, and Phi Eta Sigma.

Other:

- Participant in ten international meteorological research field experiments.
- Helped organize sessions for 12 national meetings and served as session chair.
- Served as outside expert on NOAA NWS Disaster Survey Teams.
- Chair of the Unidata Policy Committee
- Chair of University Corporation for Atmospheric Research University Relations Committee

EXHIBIT 7



CITY COUNCIL
CITY AND COUNTY OF HONOLULU
530 SOUTH KING STREET, ROOM 202
HONOLULU, HAWAII 96813-3065
TELEPHONE: (808) 768-5010 • FAX: (808) 768-5011

KYMBERLY MARCOS PINE
COUNCILMEMBER, DISTRICT 1
TELEPHONE: (808) 768-5001
EMAIL: kmpine@honolulu.gov

September 24, 2019

Mr. Daniel Orodener
Executive Officer
State of Hawaii Land Use Commission
Department of Business, Economic Development & Tourism
P. O. Box 2359
Honolulu, HI 96804-2359

Ms. Kathy Sokugawa
Acting Director
Department of Planning & Permitting
650 S. King Street, 7th Floor
Honolulu, HI 96813

RE: Request for Clarification Regarding Koolaupoko Sustainable Communities Plan

Dear Mr. Orodener and Ms. Sokugawa:

I have been asked to clarify the Council's intent regarding the following language in Section 3-19 of the Koolaupoko Sustainable Communities Plan. Upon rereading the planned Hawaiian Memorial Park (HMP) expansion, the language currently states: "Any proposed expansion by Hawaiian Memorial Park must include a 150-foot buffer from residential homes, a 2,000-foot buffer from the Pohai Nani senior living community, and a phased approach to sales and marketing. . . ."

The Council's intent was to set the buffer at 2,000 feet from the Pohai Nani property line and 150 feet from the residential property lines.

Should you have any questions, please call my office at 768-5001.

With Aloha,

A handwritten signature in black ink that reads "Kymberly Pine". The signature is stylized with a large, flowing "K" and a cursive "Pine".

Kymberly Pine
Councilmember, District 1

EXHIBIT 8

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAIKOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

October 31, 2018

Mr. Ronald Sato
Helber, Hastert, and Fee Planners
733 Bishop Street, Suite 2590
Honolulu, Hawai'i 96813
Transmitted via email to: rsata@hhf.com

Dear Mr. Sato,

We have reviewed the draft Environmental Impact Statement (DEIS) for the Hawaiian Memorial Park Expansion. The Division of Forestry and Wildlife (DOFAW) offers the following comments on the DEIS.

Protected Species

Black-line Damselfly Habitat Requirements

The black-line damselfly (*Megalagrion nigrohamatum nigrolineatum*) has been documented as currently present at a seep located within the project area. This species is one of 23 damselfly species endemic to Hawaii. It is a single-island endemic, found only on the island of O'ahu. The species inhabits stream corridors, as well as springs and seeps near streams. Populations of black-line damselfly previously occurred in both the Waianae and Ko'olau mountains, and while they remain in low abundance in Ko'olau streams, the species is now considered extirpated from the Waianae Mountains. Habitat loss and habitat alteration, and the introduction of non-native species (introduced fish and amphibian predators) have resulted in dramatic declines in populations of Hawaiian damselflies across their historic ranges.

Springs and seeps represent integral habitat for declining damselfly species. Aquatic invasive predators typically travel in surface waters to disperse across the landscape, therefore streams are ideal corridors in which these predators become established and expand their ranges. In contrast, seeps and springs have only intermittent or no connectivity to other bodies of water. As a result, these habitats often remain refuges for threatened species which would otherwise be subject to high mortality from introduced predators. An example of a damselfly which has been extirpated from nearly its entire native range on O'ahu by aquatic invasive predators is the orange-black damselfly (*M. xanthomelas*). That species is now found in just a single 100-meter stretch of artificial habitat that is maintained and the population persists because the habitat has no surface-

water connection to any stream. At the proposed Hawaiian Memorial Park expansion, the seep (also referred to as a spring) in question that is within the Hawaii Memorial Park property also has no direct surface-water connection and is likely to serve a similar role for *M. nigrohamatum nigrolineatum* and therefore could be crucial for conservation of this species on Oahu.

The DEIS does recognize the importance of the seep habitat and discusses management actions under the proposed action for the area. There is a commitment to fence the area to keep out pigs, monitor water flow and the presence of non-native fish predators, and work with the US Fish and Wildlife Service to establish a habitat restoration and conservation program (p. 3-56). There is no proposal in the DEIS proposed action to establish a managed preserve for the seep area. This needs further explanation and evaluation. We note that Figure 2.7 indicates at least part of the seep area is designated as an area to be revegetated.

Hydrology Assessment for Impacts to the Black-line Damselfly

Appendix H of the DEIS is a subcontractor Report *Assessment of the Potential Impact on Groundwater of the Proposed Expansion of the Hawaiian Memorial Park*. This report describes the groundwater seep habitat that supports the damselfly as emanating in part from approximately four feet downslope from a dug well. This source is further described as follows: "The groundwater seep is maintained by the natural discharge of groundwater moving downslope through the poorly permeable residual soils overlying the unweathered Kailua volcanics at depth" (p. 21).

The general description of the proposed action which is described in the subcontractor report is that the project would involve "installation of retaining walls and fill of tens of feet in depth in the area upslope from the well and seep" (p. 13). The report states "Loading by the fill behind the retaining walls does have the potential to compress the soils below through which the groundwater is moving downslope." (p. 22). The proposed solution to alleviate this potential compression and ensure that the quantity and direction of groundwater flow is maintained is to construct "at least two and possibly three deeper subsurface drains" (p. 22).

DOFAW does not agree that the proposed solution is sufficient to maintain the essential flow characteristics that support the endangered blackline damselfly habitat and there is unlikely to be any solution under the existing plan and site layout with the proposed extensive cut and fill and retaining walls that can provide the degree of certainty necessary that there would be no impacts to the damselfly habitat. A description of the full length of the seep flow is described as follows in the subcontractor plan: "Based on results of the well test, flow in the upper one third to one half of the linear seep is maintained by subsurface leakage from the well" then "Further downslope, flow in the seep increases continuously to its ultimate discharge into the Ohaha Place drainage system" (pp. 21-22). This description indicates that subsurface groundwater in other areas of the site, other than from the groundwater in the area of the dug well, may be important to maintain the habitat in the lower one-half of the seep area. This indication of complexity is supported in the discussion of soils in the DEIS which notes the complex terrain and surface hydrology in the area of the seep: "The spring area contains multiple swale alignments and localized standing water" (p. 3-11 of the DEIS main text). The overall complexity and uncertainty of groundwater discharge along the entire length of the seep flow that is supporting

the endangered damselfly is a significant consideration.

Although the DEIS does specify monitoring of the seep flow after the alterations are made (p. 3-56), there is minimal data available to judge what seasonal level of flow would be a concern and no contingencies proposed if a flow abnormality is observed. The DEIS also states that "Herbicide, and to a lesser extent pesticide, usage may occur as a result of landscaping maintenance activities associated with cemetery expansion area" (p. 3-87). Specific measures would be needed to prevent runoff with these substances from reaching the seep area. Fertilizer runoff may also alter vegetation growth and affect water quality in the seep. An additional area of concern is that there is apparently no permit for the existing dug well that is now the source of the upper portion of the seep and if so this structure is not legal at the present time.

Based on the above analysis DOFAW recommends that the project proposed action be redesigned to avoid the need for large amounts of fill and retaining walls that are hydrologically upgradient of the seep. If this avoidance is not possible, the project proponent should apply to DLNR for a Habitat Conservation Plan and associated Incidental Take License for impacts to the damselfly. Additionally, we suggest implementation of further measures to ensure pesticides or herbicides do not reach the seep area through surface runoff. We also recommend that the landowner work with the DLNR Commission on Water Resource Management and DOFAW to decide how to address the unpermitted dug well going forward to ensure that habitat for the damselfly is maintained.

Hawaiian Hoary Bat

The proposed avoidance measure for this species to avoid disturbance of trees greater than 15 feet in height during the bat breeding and pupping season of June 1 to September 15 is adequate as written.

Seabirds

DOFAW agrees that seabirds are not expected to be impacted based on the project proposed action: "The project should not impact protected seabirds because: 1) no night-time construction is planned, and 2) no exterior lighting is planned as part of site improvements" (p. ES-6).

Vegetation and Landscaping

If the proposed action for the project is approved, DOFAW has the following recommendations regarding vegetation:

- Avoid importing to Oahu soil or other plant material from off-island. You may consider the Hawaii Interagency Biosecurity Plan at <http://dlnr.hawaii.gov/hisc/plans/hibp/> in planning, design, and construction so that the project is in-line with the plan.
- Use native plant species for landscaping that are appropriate for the area (i.e. climate conditions are suitable for the plants to thrive, historically occurred there, etc.). Invasive plant species should be avoided. DOFAW recommends consulting the Hawai'i weed risk assessment website to determine the potential invasiveness of plants proposed for use in the project (<http://www.botany.hawaii.edu/faculty/daehler/wra>)

We appreciate the opportunity to provide comments on the proposed action. Please contact James Cogswell, Wildlife Program Manager, at 808-587-4187 or James.M.Cogswell@hawaii.gov if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. G. Smith', written over the word 'Sincerely,'.

David G. Smith
Administrator

cc: Chairperson, Board of Land and Natural Resources
DLNR Land Division

EXHIBIT 9

CURRICULUM VITAE

M. Lee Goff

Home Address:

45-187 Namoku St.
Kaneohe, Hawaii 96744
Telephone (808) 235-0926
Cell (808) 497-9110
email: lgoft@chaminade.edu

Date of Birth: 19 Jan. 1944
Place of Birth: Glendale California
Military Status: U.S. Army, 2 years active duty 1966-68

Education: University of Hawaii at Manoa; B.S. in Zoology 1966
California State University, Long Beach; M.S. in Biology 1974
University of Hawaii at Manoa; Ph.D. in Entomology 1977

Professional Experience:

1964 - 1966. Department of Entomology, B.P. Bishop Museum, Honolulu. Research Assistant (Diptera Section).
1968 - 1971. Department of Entomology, B.P. Bishop Museum, Honolulu. Research Assistant (Acarology Section).
1971 - 1971. International Biological Program, Hawaii Volcanoes National Park. Site Manager for IBP field station.
1971 - 1974. Department of Biology, California State University, Long Beach. Teaching Assistant and Research Assistant.
1974 - 1974. Kaiser Hospital, Harbor City, California. Clinical Laboratory Assistant (Parasitology and Regional Endocrinology Laboratory).
1974 - 1977. Department of Entomology, University of Hawaii at Manoa, Honolulu. Teaching Assistant.
1977 - 1983. Department of Entomology, B.P. Bishop Museum, Honolulu. Acarologist.
1983 - 2001. Department of Entomology, University of Hawaii at Manoa, Honolulu. Professor of Entomology.
1977 - present. Curatorial responsibility for National Chigger Collection of U.S. National Museum of Natural History/Smithsonian Institution.
1986 - 1992. Editorial Board, Bulletin of the Society of Vector Ecologists.
1986 - present. Department of the Medical Examiner, City & County of Honolulu. Consultant in forensic entomology.
1986 - 1993. State of Hawaii, Natural Area Reserves System Commission. Commissioner and Chair of Commission.
1989 - 2006. Editorial Board, International Journal of Acarology.
1992 - present. International Advisory Board, International Journal of Biology and Medicine
1992 - 1995. Pathology/Biology Research Advisory Committee, American Academy of Forensic Sciences.
1993 - 1995. Discipline Assessment Task Force, Pathology/Biology Section, American Academy of Forensic Sciences.
1993 - 1996. Forensic Entomology Working Group, American Academy of Forensic Sciences, Chair.
1993 - 2001. Curator, Entomology Museum, Department of Entomology, University of Hawaii at Manoa
1994 - 1998. Chair of Entomology Graduate Field, Department of Entomology, University of Hawaii at Manoa.

1994 - 1997. Research Associate in Entomology, B.P. Bishop Museum, Honolulu, Hawaii.
 1994 - present. Avian Disease Recovery Working Group, U.S. Fish and Wildlife Service, Pacific Islands Office, Honolulu, Hawaii.
 1995 - present. Editorial Board, Systematic and Applied Acarology.
 1996 -1997. Chair Pathology/Biology Section, American Academy of Forensic Sciences.
 1996 - 1999. American Board of Forensic Entomology, Chair, Board of Directors.
 1997- present. Editorial Board, Journal of Forensic Sciences
 2000- 2008. National Disaster Medical System, D-MORT Region 9, U.S. Dept. of Health and Human Services. Team member.
 2001-2008 Associate editor, FORENSICA
 2001 -2013 Professor of Forensic Sciences and Director of Forensic Sciences Program , Chaminade University of Honolulu.
 2001 – 2015 Consultant in Entomology for episodes of CSI on CBS.
 2001 - present Professor Emeritus, University of Hawaii at Manoa, Honolulu, HI.
 2002 - 2003 Subject Editor, Forensic Entomology and Myiasis, Journal of Medical Entomology
 2003 - present Court T.V. Curriculum Task Force, AAFS
 2003 –2014 Curator, Crime Scene Insects. ExhibitQ, Inc. Long, Beach, California. Exhibit appeared at: St. Paul, MN; Roanoke, WV; Norfolk, VA; New York, NY; Chicago, IL; Berkeley, CA; Memphis, TN; Indianapolis, IN, Phoenix, AZ; Bozeman, MT, Miami, FL
 2004 Visiting Professor, Instituto de Biologica, UNICAMP, Campinas, Brazil
 2004 – 2008 Research Review Committee, Path/Biol Sect, American Academy of Forensic Sciences
 2005 – 2007 Interim Dean, Division of Natural Sciences and Mathematics, Chaminade University of Honolulu
 2013 - Retired, 31 July 2013 Professor Emeritus, Chaminade University of Honolulu
 2017- Adjunct Professor, Criminal Justice, Hawaii Pacific University

Awards:

National Institutes of Health Trainee to Institute of Acarology, Ohio State University. 1973 and 1976.
 Erhorn Fund Award, Department of Entomology, University of Hawaii at Manoa. 1975 and 1977.
 American Academy of Forensic Sciences, Pathology/Biology Section Research Award for contributions to forensic pathology and legal medicine. 1987, 1988, 1989, and 1992.
 Distinguished Science Educator, Hawaii Academy of Science, 2005
 University of Bari Medal awarded for contributions to forensic entomology, 2006
 Fr. John Bolin Excellence in Scholarship Award, Chaminade University of Honolulu, 2007
 Pathology/Biology Section Award for Achievement in the Forensic Biological Sciences, 2008.
 First time award was presented

Professional and Honorary Organizations:

Acarological Society of America (Governing Board 1982-85, 1997-2001; President 1991)
 American Academy of Forensic Sciences (Fellow 1993; Secretary, Pathology/Biology Section 1995-1996; Chair, Pathology/Biology Section 1996-97)
 American Board of Forensic Entomology 1996-2012 (Chair, Board of Directors 1996-1999; Chair, Executive Committee 2006-2008)
 Mid-Pacific Association of Forensic Scientists (Executive Board 1991-96)
 Sociedad Espanola de Criminologia y Ciencias Forenses - Honorary Member
 Delta Delta Epsilon, Forensic Sciences Honor Society

Courses Taught:

General Entomology (UHM, CUH)	World of Insects (team taught)(UHM)
Systematic Entomology (UHM)	Forensic Entomology (UHM & CUH)

Medical/Veterinary Ento. (UHM)	Immature Insects (UHM)
Acarology (UHM)	Entomology Seminar (UHM)
Forensic Science Internship (CUH)	Forensic Science Seminar CUH)
Terrorism & Justice (CUH)	Crime Scene Investigation (CUH, HPU)
Evidence Against Extraordinary Crimes (CUH)	Trace Evidence (team taught)(CUH)
Intro to Forensic Sciences (CUH)	

(UHM - University of Hawaii at Manoa; CUH - Chaminade University of Honolulu; HPU – Hawaii Pacific University)

Museum Exhibits:

CSI: Crime Scene Insects. Traveling exhibit produced by ExhibitIQ, 2003 – 2014 Curator for exhibit

EWWW – What's Eating You? Traveling exhibit produced by ExhibitIQ Curator for exhibit

Training and Symposium Presentations:

Workshops:

Recovery, Examination and Evidence of Decomposed and Skeletonized Bodies. For American Academy of Forensic Sciences. Presented in 1989, 1990, 1991, 1993, 1995, 1998, 2000, 2002, 2004, 2006 and 2008. Organizer of workshop.

Recovery, Examination and Evidence of Decomposed and Skeletonized Bodies. For Entomological Society of America. Presented in 1992.

Operational Entomology Training/Pesticide Applicator Recertification Training. Navy Disease Vector Ecology & Control Center, NEPMU-6. 1993. Speaker

Forensic Sciences Workshop. Mid Pacific Association of Forensic Scientists, Honolulu, HI. 28-30

March 1994. Section Organizer and Speaker.

Forensic Entomology Training, Hawaii County Police Department, Hilo, HI. 20 April 1995.

Forensic Science Seminar, Maui Community College, Maui County Police Dept. 27-28 June 1995.

Detection and Recovery of Human Remains. FBI ERT Inservice Training, Forensic Sciences Research and Training Center, FBI Academy. 5-10 June 1996; 11-16 May 1997; 17-22 May 1998, 14-19 May 2000

D-MORT & D-MAT Training Workshop, Maui - 1998

VIII Jornadas de la Sociedad Espanola de Medicina Legal y Forense, Malaga, Spain - 29-31 Oct. 1998

International Seminar in Forensic Entomology, Bari, Italy - 12-14 Nov. 1998

Workshop in Medical Entomology. National Laboratory Training Network, Centers for Disease Control and Prevention, Honolulu, HI - 23 March 1999

Dr. Maggot and Mr. Worm: Techniques in Forensic Entomology. Clinical Laboratory Management

Association/Hawaii Society for Clinical Laboratory Science, Honolulu, HI - 19 May 1999

Forensic Sciences Applicability to Crime Scenes. Police Training Institute, Maui Community College, Kahului, Maui. May 1999

Forensic Medical Investigation, D-Mort and D-Mat Annual Training, Maui General Hospital, Wailuku, Maui. June 1999

Recovery, Examination and Evidence of Decomposed and Skeletonized Bodies: An Anthropological and Entomological Approach. International Association of Forensic Sciences, 15th Triennial Meetings, UCLA, Los Angeles, California, Aug. 1999.

Advances in Forensic Sciences. Maui and Hawaii County Police Departments, Hilo, Hawaii. Nov. 1999.

Forensic Anthropology Mini-Conference, California State University, Chico. Feb. 2000

D-MORT & D-MAT Training Workshop, Maui. May 2000

Forensic Entomology Workshop, Instituto de Biologica, UNICAMP, Campinas, Brazil. Aug. 2000

Applications of Entomological Evidence, California Association of Criminalists, Los Angeles. Oct. 2000.

9th Annual Investigation for Identification Educational Conference, Pensacola, Florida. Oct. 2001.
 Hawaii State Law Enforcement Conference, Honolulu, HI. Oct. 2001.
 Forensic Entomology – New Trends, 16th meeting of International Association of Forensic Sciences, Montpellier, France. Sept. 2002
 Recovery, Examination and Evidence of Decomposed and Skeletonized Bodies: A Multidisciplinary Approach. International Academy of Legal Medicine, Milan, Italy. Sept. 2003.
 Forensic Entomology – Hawaii Island Police and Prosecutors, 2014

Symposia:

Forensic Entomology Symposium. Society of Vector Ecologists. Presented during annual meetings of Society in 1985 and 1990. Organizer.
 Dr. Maggot & Mr. Worm: Forensic Entomology. Entomological Society of America. Presented during annual meeting in 1989. Organizer.
 Forensic Entomology Symposium. XVIII International Congress of Entomology, Vancouver, Canada. 1988. Speaker.
 Symposium in Forensic Entomology. XIX International Congress of Entomology, Beijing. 1992. Organizer.
 Evolutionary Strategies of Ectoparasitic Arthropods. XIX International Congress of Entomology, Beijing. 1992. Speaker.
 International Symposia in Forensic Sciences. F.B.I. Academy, Quantico. 1990, 1991 and 1992. Speaker.
 Urban Entomology: From the Wooden Cradle to the Grave. Pacific Branch, Entomological Society of America. 1992. Co-organizer.
 Evidence Response Team Training. F.B.I. Forensic Sciences Research and Training Unit, Quantico. 1993. Participant.
 Phylogenetic Perspectives on the Biology of the Parasitengona. IX International Congress of Acarology, Columbus, Ohio. 1994. Speaker
 Forensic Entomology Symposium. XX International Congress of Entomology, Florence, Italy. 1996. Organizer and speaker.
 Soil Arthropod Biodiversity Symposium. Sixth Pacific Entomology Conference, Honolulu, HI 1996. Speaker
 Mites as Bioindicators. X International Congress of Acarology, Canberra, Australia. 1998
 Forensic Entomology Symposium, 15th Triennial Meetings of the International Association of Forensic Sciences, Los Angeles, California. 1999. Organizer and speaker.
 Forensic Entomology Symposium, XXI International Congress of Entomology, Igassu Foz, Brazil. 2000 Speaker
 Multidisciplinary Symposium, American Academy of Forensic Sciences, Atlanta, GA. 2002
 Forensic Entomology Symposium, 16th Triennial Meetings of the International Association of Forensic Sciences, Montpellier, France. 2002. Co-Organizer and speaker
 Being Human – Science, Culture and Fear, Wellington, New Zealand. 2002. Speaker.
 Serial Murder Symposium, Behavioral Analysis Unit, NCAVC, F.B.I., San Antonio, 2005. Speaker
 Forensic Acarology Workshop, International Congress of Acarology, Amsterdam, Netherlands, 2006. Co-Organizer and speaker.
 Forensic Entomology Symposium, International Congress of Dipterology, San Jose, Costa Rica, 2010 Co-Organizer and Speaker
 XVI Encontro Nacional de Patologia Veterinaria, Curitiba, Brazil. 2014. Speaker.
 I Curso Nacional de Acreditacao em Policia de Protecao Animal, Curitiba, Brazil. 2014. Speaker

Invited Presentations:

Kaiser-Permanente Hospital Physicians In service Training 1986, 1992, 2008
 Queens Medical Center Physicians In service Training 1990
 American Association of Medical Transcriptionists 1989
 School of Tropical Medicine and Parasitology, University of Hawaii - 1988
 National Institute of Virology, Pune, India 1986

Hawaii Pest Control Association 1986, 1994
 National Association of Medical Examiners 1985, 1990
 Center for Insect Science, University of Arizona 1990
 Naval Environmental and Preventive Medicine Unit No. 6, Pearl Harbor 1991, 1995, 1998
 Biology Department, University of North Dakota 1991
 Hawaii Science Teachers Association Spring Conference 1991
 Gantner Memorial Lecture, St. Louis University School of Medicine 1992
 William Brady Memorial Lecture, University of Georgia 1992
 ARCS Honolulu Chapter - 1993
 Mike Duke Memorial Seminar, North Carolina State University 1993
 Department of Entomology and Nematology, University of Florida 1994
 Vector Control Branch, Hawaii State Health Dept. 1994, 1997, 1998
 CTAHR Alumni Association Open House - 3 presentations - April 1994
 Society of Forensic Engineers and Scientists - April 1994
 Department of Pathology, Ohio State University - July 1994
 B.P. Bishop Museum, Distinguished Lecturer Series - July 1994
 Pharmacology Department, University of Hawaii at Manoa - Jan. 1995
 University of Hawaii School of Medicine, Grand Rounds - March 1995
 National Science Foundation Summer Young Scholars Program, University of Hawaii at Manoa -
 1995, 1996, 1997
 Mid-Pacific Association of Forensic Scientists - 1996
 University of Kentucky, School of Medicine - 1996
 Hawaii Volcanoes National Park, Hawaii - 1995, 1997
 Smithsonian Institution, Washington, D.C. - 1997
 Department of Zoology Seminar Series, University of Hawaii at Manoa - 1997
 Biology and Anthropology Departments, California State Univ., Chico - 1998
 Annual Toxicology Lecturership, Toxicology Section, AAFS, San Francisco - 1998
 Dept. of Entomology, Univ. of Massachusetts, Amherst - 1992, 1998
 Victoria University of Wellington, Wellington, New Zealand - 1998
 New Zealand Agricultural Research Institute, Upper Hutt, New Zealand - 1998
 Australian Institute of Health and Welfare, Canberra, Australia - 1998
 Australian National University, Canberra, Australia - 1998
 Maui Memorial Hospital, Wailuku, Maui - 1998
 Plenary Lecture, VIII Jornadas de la Sociedad Espanola de Medicina Legal y Forense, Malaga,
 Spain - 1998
 Department of Zoology Seminar Series, University of Hawaii at Manoa - 1998
 Department of Biological Sciences, Texas Tech University - 1998
 Chaminade University - 1999
 Society of Sigma Xi, University of Hawaii, Hilo - 1999
 Biology and Anthropology Departments, California State Univ., Chico - 2000
 FRENZY Forensic Exposition, Washington, D.C. - 2000
 Smithsonian Institution, Washington, D.C. - 2000
 Lucent Technology/Bell Laboratories, New Jersey - 2000
 Hawaii Dermatological Society, Honolulu - 2000
 Tripler Army Medical Center, Honolulu - 2000
 Rotaract, Honolulu - 2000
 Chaminade University, Honolulu - 2001
 Hawaii Library Association - 2001
 West Oahu Rotary - 2001, 2006
 Hawaii Pacific University - 2001
 American Bar Association, Section of Litigation, Scottsdale, Arizona - 2001
 Texas A & M University Biology Dept. - 2001
 University of Tulsa, Biology Sciences, Tulsa, Oklahoma - 2002
 Honolulu Police Department - 2002
 Victoria University of Wellington, Wellington, New Zealand - 2002
 Royal Society of New Zealand, Te Pappa Museum, Wellington, New Zealand - 2002

Hawaii County Prosecutors, Hilo, Hawaii – 2002
 International Academy of Legal Medicine, Milan, Italy – 2003
 Minnesota State Museums, St. Paul, MN - 2003
 Keynote Speaker, American Association of Veterinary Pathologists, Philadelphia, PA – 2004
 Australia New Zealand Association of Forensic Sciences, Wellington, New Zealand – 2004
 Auckland Police Department, Auckland, New Zealand - 2004
 Keynote Speaker, American Society of Clinical Laboratory Sciences, Los Angeles, CA – 2004
 Peggy Notebeart Nature Museum, Chicago, IL – 2004
 Northern New Mexico University, Las Vegas, NM – 2004
 Hawai Pacific University, Honolulu, HI – 2004, 2005, 2006
 Virginia Museums and Aquarium, Virginia Beach, VA, 2005
 European Association for Forensic Entomology, Bari, Italy, 2006
 University of California Santa Barbara, CA 2006
 Lawrence Science Center, University of California Berkeley, CA 2006
 New York Science Center, Queens, NY, 2006
 Indiana State Museum, Indianapolis, IN, 2006
 Virginia Tech University, Virginia - 2007
 Purdue University, Indianapolis, Indiana - 2007
 Indiana State Museum, Indianapolis, Indiana - 2007
 Science Museum of Western Virginia, Roanoke, Virginia – 2007
 Las Vegas Museum of Natural History, 2008
 Museum of the Rockies, Bozeman, MT 2008
 Kaiser Hospital Grand Rounds, HI 2008
 Science Café, Sigma Xi, 2008
 B.P. Bishop Museum Science Series, 2009
 Miami Museum of Natural History, Miami – 2009
 Discovery Center, Raleigh, NC - 2009
 Guam Forensic Sciences Symposium, Guam – 2009
 International Congress of Dipterology, San Jose, Costa Rica, Plenary Speaker – 2010
 Sloan Museum, Flint, MI – 2011
 Washington State University, Pullman, WA – 2011
 University of Idaho, Moscow, ID – 2011
 Second Guam Forensic Sciences Symposium – 2011
 Spanish National Police Academy, Madrid, Spain - 2011
 Spanish Association of Criminologists and Forensic Scientists, Valladolid, Spain – 2011
 Stellenbosch University, Cape Town, South Africa – 2012
 Agriculture South Africa, Pretoria, South Africa – 2012
 National Museum of Natural History, San Juan, Costa Rica – 2012
 Springs Nature Preserve, Science Week in Las Vegas – 2013
 Stellenbosch University, Cape Town, South Africa – 2014
 Bangor University, Wales, UK – 2014
 V International Symposium in Entomology, Brazil – 2015
 Universidade Federal de Vicosa, Brazil – 2015
 Universitat Polytechnica de Valencia, Spain – Plenary Speaker, July 2016

Submitted Presentations:

1974. The number of true leg segments in larval chiggers (Acarina: Prostigmata, Trombiculidae) .
IV International Congress of Acarology, Saalfelden, Austria.
1976. Mesostigmata associated with fumeroles in Hawaii Volcanoes National Park.
Entomological Society of America, Honolulu, Hawaii.
1977. Parasitope specificity in chiggers (Acari: Trombiculidae) infesting Papua New Guinea land
mammals. American Society of Parasitologists, Las Vegas, Nevada.
1978. Resource tracking patterns in Acari associated with birds in Hawaii Volcanoes National
Park. 2nd Conference in Natural Sciences, HVNP, Hawaii.
1978. Parasitope specificity in chiggers (Acari: Trombiculidae) infesting land mammals in Papua

- New Guinea. V International Congress of Acarology, East Lansing, Michigan.
1980. Basic rat riding: A flea's guide to survival on the host. 3rd Conference in Natural Sciences, HVNP, Hawaii.
 1981. Correlation of cheliceral blade morphology and parasitope selection by larva of Trombiculidae. Entomological Society of America, San Diego, California.
 1982. Mites that sizzle, slosh, and go bump in the dark: Exploitation of stress habitats by Acari in the Hawaiian Islands. 4th Conference in the Natural Sciences, HVNP, Hawaii.
 1982. Distribution of vectors for chigger-borne rickettsiosis in Papua New Guinea. VI International Congress of Acarology, Edinburgh, Scotland.
 1983. Dr. Maggot and Mr. Worm: Forensic entomology in Hawaii. 5th Conference in the Natural Sciences, HVNP.
 1983. Vectors for chigger-borne rickettsiosis in Papua New Guinea. Entomological Society of America, Detroit, Michigan.
 1984. Correlation of idiosomal color, parasitope, and cheliceral blade length of chiggers (Acari: Trombiculidae) with transmission of chigger-borne rickettsiosis. American Association for the Advancement of Science, San Francisco, California.
 1985. Practical applications of forensic entomology. 8th Big Island Science Conference, Hilo, Hawaii.
 1985. Two case studies in forensic entomology. Pacific Branch, Entomological Society of America, Honolulu, Hawaii.
 1986. Maggot and Worm revisited: A case study in forensic entomology. 6th Conference in the Natural Sciences, HVNP, Hawaii.
 1986. Gamasid mites as potential indicators of postmortem interval. VII International Congress of Acarology, Bangalore, India.
 1986. Bdellidae (Acari: Actinedida) of the Hawaiian Islands. VII International Congress of Acarology, Bangalore, India. with S.F. Swift presenting.
 1986. A case study in forensic entomology from Hawaii. Entomological Society of America, Reno, Nevada.
 1987. Computer assisted estimation of postmortem interval using arthropod succession in diverse tropical habitats. Pathology/Biology Section, American Academy of Forensic Sciences, San Diego, California.
 1987. Estimation of postmortem interval using arthropod succession in diverse tropical habitats. Entomological Society of America, Boston, Massachusetts.
 1988. Detection of organophosphate poisoning in a putrefying body by analyzing arthropod larvae. Pathology/Biology Section, American Academy of Forensic Sciences, Philadelphia, Pennsylvania. Given by K. Gunatilake.
 1988. Effect of cocaine in decomposing tissues on the rate of development of *Boettcherisca peregrina* (Diptera: Sarcophagidae). Entomological Society of America, Louisville, Kentucky.
 1989. Effect of cocaine in tissues on the rate of development of *Boettcherisca peregrina* (Diptera: Sarcophagidae). Pathology/Biology Section, American Academy of Forensic Sciences, Las Vegas, Nevada.
 1990. Effect of heroin in decomposing tissues on the rate of development of *Boettcherisca peregrina* (Diptera: Sarcophagidae). American Academy of Forensic Sciences, Cincinnati, Ohio.
 1990. Use of Acari in establishing a postmortem interval in a homicide case on the island of Oahu, Hawaii. VIII International Congress of Acarology, Ceske Budejovice, Czechoslovakia.
 1990. All in the pampers: Entomological aspects of a child abuse/attempted murder case. Entomological Society of America, New Orleans, Louisiana.
 1991. Use of Acari in establishing a postmortem interval in a homicide case on the island of Oahu, Hawaii. Pathology/Biology Section, American Academy of Forensic Sciences, Anaheim, California.
 1991. Do not open until...: Effect of wrapping on the rate of arthropod invasion of a corpse. Entomological Society of America, Reno, Nevada.
 1992. Insects as forensic indicators: The use of the black soldier fly, *Hermetia illucens* (Diptera:

- Stratiomyidae), as a measure of human postmortem interval. Pathology/Biology Section, American Academy of Forensic Sciences, New Orleans, Louisiana.
1992. A BASIC algorithm for calculating the postmortem interval from arthropod successional data. Pathology/Biology Section, American Academy of Forensic Sciences, New Orleans, Louisiana. With K. Schoenly
 1992. Effect of crystal methamphetamine in decomposing tissues on development of *Parasarcophaga ruficornis* (Diptera: Sarcophagidae). Pathology/Biology Section, American Academy of Forensic Sciences, New Orleans, Louisiana.
 1993. Effects of amitriptyline in decomposing tissues on the development of *Parasarcophaga ruficornis* (Diptera: Sarcophagidae). Pathology/Biology Section, American Academy of Forensic Sciences, Boston, Massachusetts.
 1993. Effects of phencyclidine in decomposing tissues on the development rate of *Parasarcophaga ruficornis* (Diptera: Sarcophagidae). Criminalistics Section, American Academy of Forensic Sciences, Boston, Massachusetts.
 1993. Insect colonization and time since death: Observations on the role of physical, chemical, and environmental barriers. Pathology/Biology Section, American Academy of Forensic Sciences, Boston, Massachusetts. Dr. W.D. Lord presenting.
 1994. Forensic implications of myiasis by Calliphoridae (Diptera) larvae. Criminalistics Section, American Academy of Forensic Sciences, San Antonio, Texas
 1994. Hanging out at the sixteenth hole: Problems in estimation of postmortem interval using entomological techniques in cases of death by hanging. Pathology/Biology Section, American Academy of Forensic Sciences, San Antonio, Texas.
 1994. Living in the drip zone: Comparison of acarine faunas associated with decomposing remains in arid and rain forest habitats. 9th International Congress of Acarology, Columbus, Ohio.
 1995. Factors affecting accuracy of postmortem interval estimates using entomological techniques. National Association of Medical Examiners, San Diego, California.
 1995. Seasonal and elevational patterns of plasmodial infection in the mosquito vector of avian malaria in Hawaii. Entomological Society of America, Las Vegas, Nevada. With D. LaPointe
 1996. Hanging out at the 16th hole and don't go into that room. Entomological Society of America, Louisville, Kentucky.
 1996. Arthropod succession onto exposed carrion in three contrasting tropical habitats. E.N. Richards presenting. Entomological Society of America, Louisville, Kentucky.
 1998. Differences in larval development when subjected to environmental influences. with J.C. Alexis and W.D. Lord. Criminalistics Section, American Academy of Forensic Sciences.
 1999. Comparison of decomposition in terrestrial habitats, an intertidal ecotone, and an anchialine pool in the Hawaiian Islands. with J.B. Davis. Pathology/Biology Section, American Academy of Forensic Sciences.
 1999. Taphonomic effects of child sized remains located in surface deposit and shallow burial disposal sites. with R.J. Morton and W.D. Lord. Criminalistics Section, American Academy of Forensic Sciences.
 1999. The Honolulu Plague Epidemic - Some things worked, others didn't. Last Word Society, American Academy of Forensic Sciences.
 2000. A Glowing Recommendation. Entomological Society of America, Entomological Society of Canada and Societe d'Entomologie du Quebec, Joint meetings, Montreal, Quebec, Canada.
 2005. DNA extraction of desiccated contact lens using the medium Chelex 100. with P.A. Cadiente & E. Shimikawa. General Section, American Academy of Forensic Sciences, New Orleans
 2005. Rearing of *Chrysomya megacephala* (Diptera: Calliphoridae) at different population densities. With N. Stalter & R.M. Iwamoto. General Section, American Academy of Forensic Sciences, New Orleans
 2006. Forensic Entomology: What Do We Really Estimate. National Association of Medical Examiners, Los Angeles, CA - 2005.
 2007. Forensic Entomology: Problems and Pitfalls. American Academy of Forensic Sciences,

San Antonio, Texas - 2007

Grants and Projects

Larval Trombiculidae (Acari) of Papua New Guinea. National Institutes of Health Research Grant AI 13893. 1977-1983. P.I.

Larval Trombiculidae (Acari) of Papua New Guinea. National Institutes of Health Research Grant AI 20520. 1983-1985. P.I.

Avian malaria in Hawaiian land birds. USDI Cooperative National Parks Service Resources Study

Unit, University of Hawaii Contract CX 8000-7-0009. 1977-1980. Co.-P.I.

Mites (Acari) of economic importance in Hawaii. Hawaii Institute of Tropical Agriculture and Human Resources (HITAHR) Project HAW00944-H. 1983-1987. P.I.

Forensic entomology in the Hawaiian islands. HITAGR Project HAW00946-S. 1984-1995. P.I.

Larval Trombiculidae of Papua New Guinea and the Pacific region. HITAGR Project HAW00948-S. P.I.

Mites damaging bananas in Hawaii. HITAGR Project HAW00958-S (GACC funding). P.I.

The effect of cocaine in decomposing tissues on the development of *Boettcherisca peregrina* (Diptera: Sarcophagidae). American Academy of Forensic Sciences (AAFS), Pathology/Biology Section Research Grant. 1987-1988. P.I.

The effect of heroin in decomposing tissues on the development of *Boettcherisca peregrina* (Diptera: Sarcophagidae). AAFS, Pathology/Biology Section Research Grant. 1988-1989. P.I.

The biology, host range, and predator complex of the vegetable mite, *Tetranychus neocalidonicus*, in Hawaii. HITAGR Project HAW00900-S. 1988-1992. P.I.

The effect of amitriptyline and phencyclidine in decomposing tissues on the development of *Parasarcophaga ruficornis* (Diptera: Sarcophagidae). AAFS, Pathology/Biology Section Research Grant. 1991-1992. P.I.

Baseline survey of acarine (mite) communities associated with *Metrosideros polymorpha* at Hono Na Pali and Kuia Natural Area Reserves on Kauai Island. State of Hawaii, Natural Area Reserves System Research Grant. 1990-1992. P.I.

Mosquitoes in Hawaiian forest bird habitats. U.S. Fish and Wildlife Service Research Grant. 1991-1994. P.I.

Effects of 3,4-methylenedioxymethamphetamine or "Ecstasy" in decomposing tissues on the development of *Parasarcophaga ruficornis* (Diptera: Sarcophagidae). AAFS, Pathology/Biology Section Research Grant. 1993-1994. P.I.

Ophthalmomyiasis on the island of Oahu. HITAGR Project HAW000921-H. 1996-1999. P.I.

Systematics of chiggers (Acari: Trombiculidae and Leeuwenhoekiidae) in the Pacific region. HITAGR Project 000955-H. 1995-1999. P.I.

Altitudinal variations in arthropods associated with decomposing remains in Hawaii. HITAGR Project 000954-H. 1995-1999. P.I.

Invertebrate study at Kealia Pond N.W.R. U.S. Fish and Wildlife Service Grant, Maui National Wildlife Refuge. 2001-2003. P.I.

Publications:

1. Goff, M.L. 1971. New records of chiggers (Acarina, Trombiculidae) from the Northwestern Hawaiian Islands. J. Med. Entomol. 8: 456.
2. Goff, M.L., R.B. Loomis & J.M. Brennan. 1972. *Odontacarus dentatus* (Ewing, 1925) is the senior synonym of *O. galli* (Ewing, 1946) (Acarina: Trombiculidae). J. Med. Entomol. 9: 479-81.
3. Loomis, R.B. & M.L. Goff. 1973. A new genus and two new species of North American leeuwenhoekine chiggers (Acarina, Trombiculidae). J. Med. Entomol. 10: 113-17.
4. Goff, M.L. & R.B. Loomis. 1973. Two new species of *Odontacarus* Ewing (Acarina: Trombiculidae) from California and Baja California, Mexico. J. Med. Entomol. 10: 333-36.
5. Goff, M.L. & R.B. Loomis. 1974. A new species of *Comatacarus* (Acarina: Trombiculidae) from central United States. Bull. So. Calif. Acad. Sci. 73: 170-71.
6. Goff, M.L. 1975. A new species of chigger (Acarina: Trombiculidae) from the Midway Islands. J. Med. Entomol. 12: 52-54.
7. Brennan, J.M. & M.L. Goff. Keys to the genera of chiggers of the Western Hemisphere (Acarina: Trombiculidae). J. Parasitol. 63: 554-66.
8. Goff, M.L. 1977. Correction of the description of *Neotrombicula megensi* Goff, 1975 (Acarina: Trombiculidae). J. Med. Entomol. 13: 718.
9. Goff, M.L. 1977. A new species of *Toritrombicula* (Acarina: Trombiculidae) from the Pacific Golden Plover in the Hawaiian Islands. J. Med. Entomol. 13: 735-37.
10. Goff, M.L. 1977. Two new species of *Guntheria* (Acarina: Trombiculidae) from New Guinea. J. Med. Entomol. 14: 38-41.
11. Goff, M.L. 1977. Two new species of *Schoengastia* (Acari: Trombiculidae) from New Guinea mammals. J. Med. Entomol. 14: 243-46.
12. Brennan, J.M. & M.L. Goff. The neotropical genus *Hoffmannina*: four new species and other records from Mexico, Panama and Venezuela (Acarina: Trombiculidae). J. Parasitol. 63: 908-14.
13. Goff, M.L. 1977. A new species of *Guntheria* (Acari: Trombiculidae) from Papua New Guinea. J. Parasitol. 63: 915-17.
14. Goff, M.L. & R.B. Loomis. 1977. The genus *Odontacarus* (Acari: Trombiculidae) in North America. J. Med. Entomol. 14: 370-73.
15. Goff, M.L. & J.M. Brennan. 1977. The genus *Speleocola* Lipovskyi (Acari: Trombiculidae) with descriptions of two new species from Venezuela. J. Parasitol. 63: 1089-91.
16. Goff, M.L. & J.M. Brennan. 1978. A new species of *Beamerella* (Acari: Trombiculidae) from the leaf-chinned bat, *Mormoops megalophylla*, in Colombia. J. Med. Entomol. 14: 534-35.
17. Brennan, J.M. & M.L. Goff. 1978. Three new monotypic genera of chiggers (Acari: Trombiculidae) from South America. J. Med. Entomol. 14: 541-44.
18. Goff, M.L. & J.M. Brennan. 1978. Three new species of *Colicus* (Acari: Trombiculidae) from Venezuela. J. Med. Entomol. 14: 565-69.
19. Brennan, J. M. & M.L. Goff. 1978. Two new species of *Crotiscus* (Acari: Trombiculidae) from northern South America. J. Med. Entomol. 14: 569-72.

20. Goff, M.L. & J.M. Brennan. 1977 (published in 1978). A new monotypic genus of chiggers and four new species of *Quadrasetia* from Venezuela (Acari: Trombiculidae). Great Basin Natur. 37: 501-9.
21. Goff, M.L. 1978. Two new species of *Guntheria* (*Guntheria*) (Acari: Trombiculidae) from Papua New Guinea, with key to the nine known species in the subgenus. J. Med. Entomol. 15: 21-25.
22. Goff, M.L. & J.M. Brennan. 1978. A new species of *Odontacarus* (Acari: Trombiculidae) from Venezuela with a pygosomal plate. J. Med. Entomol. 15: 50-51.
23. Holzapfel, E.P., H.P. Clagg & M.L. Goff. 1978. Trapping of air-borne insects on ships on the Pacific, Part 9. Pacific Insects 19: 65-90.
24. Goff, M.L. 1978. A new species of *Radfordiana* from Papua New Guinea and redescrptions of *R. rostrata* Womersley 1952, and *Novotrombicula owiensis* Womersley and Kohls 1947 (Acari: Trombiculidae). J. Parasitol. 64: 886-90.
25. Strandtman, R.W. & M.L. Goff. 1978. The Eupodoidea of Hawaii (Acarina: Prostigmata). Pacific Insects 19: 121-43.
26. Goff, M.L. 1979. The genus *Odontacarus* (Acari: Trombiculidae) in New Guinea, with descriptions of four new species. J. Med. Entomol. 15: 1443-54.
27. Brennan, J.M. & M.L. Goff. 1979. A new species of *Teratothrix* (Acari: Trombiculidae) from Venezuela. J. Med. Entomol. 15: 272-73.
28. Brennan, J.M. & M.L. Goff. 1978. A new species of *Atelepalme* (Acari: Trombiculidae) from Venezuela. Acarologia 20: 241-43.
29. Goff, M.L. 1979. Host exploitation by chiggers (Acari: Trombiculidae) infesting Papua New Guinea land mammals. Pacific Insects 20:321-53.
30. Goff, M.L., J.M. Tenorio & F.J. Radovsky. 1979. Mesostigmata (Acari) associated with a fumerole in Hawaii Volcanoes National Park. Pacific Insects 21: 83-89.
31. Goff, M.L. 1979. Two new species of intranasal chiggers from Papua New Guinea (Acari: Trombiculidae). J. Med. Entomol. 15: 533-36.
32. Goff, M.L. 1979. Two new species of schoengastine chiggers (Acari: trombiculidae) from Papua New Guinea. J. Med. Entomol. 16: 112-15.
33. Goff, M.L. 1979. A new species of *Odontacarus* (Acari: Trombiculidae) infesting murid rodents in Papua New Guinea. J. Med. Entomol. 16: 140-41.
34. Goff, M.L. 1979. A new species of *Guntheria* (*Guntheria*) (Acari: Trombiculidae) from Papua New Guinea. J. Med. Entomol. 16: 246-47.
35. Goff, M.L. 1979. Notes on the subgenus *Eltonella*, with redescription of *Microtrombicula* (*Eltonella*) *frittsi* (Acari: Trombiculidae). J. Med. Entomol. 16: 321-24.
36. Goff, M.L. 1979. Four new species of *Ophiomegistus* (Acari: Paramegistidae) from skinks (Lacertilia; Scincidae) in Papua New Guinea, a new record of *Ophiomegistus keithi*, and a key to the species. J. Med. Entomol. 16: 512-23.
37. Goff, M.L. 1979. A new genus and five new species of chiggers (Acari: Trombiculidae) from *Zyomys argurus*. Rec. West. Aust. Mus. 8: 81-91.
38. Goff, M.L. 1979. Species of chigger (Acari: Trombiculidae) from the orange horseshoe bat, *Rhinonictis aurantius*. Rec. West. Aust. Mus. 8: 93-96.
39. Goff, M.L. 1980. A new species of chigger (Acari:Trombiculidae) from the moss-forest rat in Papua New Guinea. Inter. J. Acarol. 6: 85-87.

40. Goff, M.L. 1980. Three new species of *Schoengastia* (Acari: Trombiculidae) from Papua New Guinea rodents with a key to *Schoengastia* species reported from New Guinea. Pacific Insects 21: 321-27.
41. Nadchatram, M. & M.L. Goff. 1980. A new species of *Blankaartia* (*Megaciella*) parasitic on a migratory bird in Irian, New Guinea (Acari: Trombiculidae). J. Med. Entomol. 17: 218-20.
42. Goff, M.L. & G.S. Spicer. 1980. A new genus of chiggers (Acari: Trombiculidae) from a cloud forest in Mexico. J. Med. Entomol. 17: 242-44.
43. Nadchatram, M., M.L. Goff & P. Thanalukshumi. 1980. The genus *Schoengastia* (Acari: Trombiculidae) in the Asiatic-Pacific region. J. Med. Entomol. 17: 268-81.
44. Goff, M.L. 1980. The genera *Guntheria* and *Ornithogastia* (Acari: Trombiculidae) in Papua New Guinea. Pacific Insects 22: 35-77.
45. Goff, M.L. & C. van Riper III. 1980. Distribution of mosquitoes (Diptera: Culicidae) on the east flank of Mauna Loa Volcano, Hawaii. Pacific Insects 22: 178-88.
46. Goff, M.L. 1980. The genus *Ophiomegistus* (Acari: Paramegistidae), with descriptions of five new species, a new structure and a key to the species. J. Med. Entomol. 17: 398-410.
47. Goff, M.L. 1980. A new species of chigger (Acari: Trombiculidae) from the white-footed dunnart (Marsupialia: Dasyuridae) in Australia. J. Med. Entomol. 17: 477-78.
48. Tenorio, J.M. & M.L. Goff. 1980. Ectoparasites of Hawaiian Rodents (Siphonaptera, Anoplura and Acari). Bishop Museum Spec. Publ. p1-32.
49. Goff, M.L. 1980. A new species of *Ophiomegistus* (Acari: Paramegistidae) from a Malaysian kukri snake. Pacific Insects 22: 380-84.
50. Fain, A. & M.L. Goff. 1980. Speleognathine mites (Acari: Ereyetidae) from birds in the Hawaiian Islands, with description of a new species. J. Med. Entomol. 17: 506-08.
51. Goff, M.L. 1980. A new species of *Whartonia* (Acari: Trombiculidae) from New Guinea fruit bats, redescription of *Whartonia penthetor* and designation of a lectotype. J. Med. Entomol. 17: 494-97.
52. Goff, M.L. 1981. Five new species of chiggers (Acari: Trombiculidae) from Papua New Guinea. J. Med. Entomol. 18: 33-40.
53. Goff, M.L. 1981. Two new species of chiggers (Acari: Trombiculidae) from the Philippine Islands. J. Med. Entomol. 18: 69-72.
54. Goff, M.L. 1981. A new species of chigger (Acari: Trombiculidae) from a skink in Western Australia. Rec. West. Aust. Mus. 8: 585-88.
55. Goff, M.L. & J.M. Brennan. 1980. The genera *Chatia* and *Shunsennia*, with description of a new species of *Chatia* (Acari: Trombiculidae). J. Parasitol. 66: 835-38.
56. Goff, M.L. & F.W. Judd. 1981. The first record of a chigger from the Texas tortoise, *Gopherus berlandieri*. Southwest. Natur. 26: 83-84.
57. Goff, M.L. 1981. Two new species of *Guntheria* (*Guntheria*) (Acari: Trombiculidae) from the lowland melomys (Rodentia: Muridae) in New Guinea. J. Med. Entomol. 18: 112-15.
58. Goff, M.L. 1981. A new species of *Polylopadium* (Acari: Trombiculidae) from Colombia, with a key to the species in the genus. J. Med. Entomol. 18: 228-31.
59. Goff, M.L. 1981. The genus *Teratothrix* (Acari: Trombiculidae), with descriptions of three new species and a key to the species. J. Med. Entomol. 18: 244-48.

60. Goff, M.L. 1981. A new species of *Guntheria* (Acari: Trombiculidae) with foliate body setae from Papua New Guinea. J. Med. Entomol. 18: 298-99.
61. Goff, M.L. 1981. Studies on Papua New Guinea chiggers (Acari: Trombiculidae). I. Two new species of *Schoengastia*. J. Med. Entomol. 18: 366-69.
62. Goff, M.L. 1981. Studies on Papua New Guinea chiggers (Acari: Trombiculidae). II. Two new species of *Guntheria*. J. Med. Entomol. 18: 370-73.
63. Goff, M.L. 1981. Studies on Papua New Guinea chiggers (Acari: Trombiculidae). III. Two new species of *Guntheria* with a key to the species in the genus from Papua New Guinea and notes on *Novotrombicula owiensis*. J. Med. Entomol. 18: 530-35.
64. Goff, M.L. 1982. A new species of *Pseudoschoengastia* (Acari: Trombiculidae) from a forest spiny pocket mouse (Rodentia: Heteromyidae) taken in Panama. J. Med. Entomol. 19: 12-14.
65. Goff, M.L. 1982. A new species of *Sasacarus* (Acari: Trombiculidae) from an Incan "rat" opossum (Marsupialia: Caenolestidae) in Peru. J. Med. Entomol. 19: 60-62.
66. Goff, M.L. 1982. New Guinea Chiggers. In: J.L. Gressitt ed., Biogeography and Ecology of New Guinea, Dr. W. Junk, Publ., The Hague. p. 545-55.
67. Goff, M.L. 1982. Studies on Papua New Guinea Chiggers (Acari: Trombiculidae). IV. *Radfordiana* is a junior synonym of *Schoengastia*, with description of new species and a key to the species. J. Med. Entomol. 19: 147-50.
68. Goff, M.L. & J.M. Brennan. 1982. The genus *Perissopalla* (Acari: Trombiculidae), with descriptions of three new species from Venezuela, correction to the description of *P. precaria*, a key to the species, and synonymy of *Pseudoschoengastia* (*Perissopalla*) *tiucali* with *Hoffmanniella beltrani*. J. Med. Entomol. 19: 169-75.
69. Goff, M.L. 1982. Studies on Papua New Guinea chiggers (Acari: Trombiculidae). V. A new species of *Trombigastia* from New Britain bats. J. Med. Entomol. 19: 204-06.
70. Goff, M.L., R.B. Loomis, W.C. Welbourn & W.J. Wrenn. 1982. A glossary of chigger terminology (Acari: Trombiculidae). J. Med. Entomol. 19: 221-38.
71. Goff, M.L. 1982. Studies on Papua New Guinea chiggers (Acari: Trombiculidae). VI. A new species of *Toritrombicula*. J. Med. Entomol. 19: 306-08.
72. Goff, M.L. 1982. Two new species of chiggers (Acari: Trombiculidae) from east African bats (Chiroptera). J. Med. Entomol. 19: 376-79.
73. Goff, M.L. 1982. Studies on Papua New Guinea chiggers (Acari: Trombiculidae). VII. Six new species. J. Med. Entomol. 19: 403-12.
74. Goff, M.L. 1982. A new species of *Paraschoengastia* (Acari: Trombiculidae) from Venezuela. J. Med. Entomol. 19: 556-57.
75. Goff, M.L. 1982. Studies on Papua New Guinea chiggers (Acari: Trombiculidae). VIII. A new species of *Sasatrombicula*. J. Med. Entomol. 19: 601-02.
76. Goff, M.L. & R.B. Loomis. 1982. Studies on Papua New Guinea chiggers (Acari: Trombiculidae). IX. A new species of Apoloniinae from the North Solomon Islands. J. Med. Entomol. 19: 603-04.
77. Goff, M.L. 1982. A new species of *Hemicheyletia* (Acari: Cheyletidae) from Kure Atoll, Northwestern Hawaiian Islands. Proc. Hawaii. Entomol. Soc. 24:83-88.
78. Goff, M.L. 1983. Studies on Papua New Guinea chiggers (Acari: Trombiculidae). X. Two new species of Schoengastini. J. Med. Entomol. 20: 40-43.

79. Loomis, R.B. & M.L. Goff. 1983. A new species of *Guntheria* (Acari: Trombiculidae) from New Zealand. J. Med. Entomol. 20: 87-89.
80. Whitaker, J.O., Jr., M.L. Goff & J.G. Matthyse. 1983. Chiggers (Acari: Trombiculidae) from some small mammals from Nigeria. Ent. News 94: 31-32.
81. Goff, M.L. 1983. A new species of chigger (Acari: Trombiculidae) from the common sheath-tailed bat in Western Australia. J. Med. Entomol. 20: 134-35.
82. Goff, M.L., J.O. Whitaker, Jr., & J.M. Dietz. 1983. Three new species of chiggers (Acari: Trombiculidae) from Brazil. J. Med. Entomol. 20: 183-88.
83. Goff, M.L. 1983. A new species of *Cotrombicula* (Acari: Trombiculidae) from the common sheath-tailed bat in Australia. Inter. J. Entomol. 25: 71-73.
84. Goff, M.L. 1983. Two new species of *Schoutedenichia* (Acari: Trombiculidae) from a shrew (Insectivora) in Tanzania, east Africa. Inter. J. Entomol. 25: 74-78.
85. Goff, M.L. & J. Ingels. 1983. A new species of *Eutrombicula* (Acari: Trombiculidae) infesting a bird and a lizard in Surinam. J. Med. Entomol. 20: 272-74.
86. Goff, M.L. 1983. A new species of bat-infesting chigger (Acari: Trombiculidae) from Tanzania, east Africa. J. Med. Entomol. 20: 306-07.
87. Goff, M.L. 1983. A new species of *Zumptrombicula* (Acari: Trombiculidae) from South Africa. J. Med. Entomol. 20: 511-13.
88. Goff, M.L. 1983. Studies on Paupa New Guinea chiggers (Acari: Trombiculidae). XI. A new species of the genus and subgenus *Guntheria*. J. Med. Entomol. 20: 565-67.
89. Goff, M.L. A new species of Apoloniinae (acari: Trombiculidae) from Somalia, Africa. J. Med. Entomol. 20: 618-19.
90. Goff, M.L. 1983. A new species of *Dolosisia* (Acari: Trombiculidae) from a migratory hamster taken in Iran. J. Med. Entomol. 20: 670-72.
91. Goff, M.L. 1983. A new species of *Gahrlepiea* (*Gahrlepiea*) (Acari: Trombiculidae) from Java. Inter. J. Entomol. 25: 281-84.
92. Syed, A.R. & M.L. Goff. 1983. A new species of *Otopheidomenis* (Acari: Otopheidomenidae) ectoparasitic on *Ascalapha odorata* (Lepidoptera: Noctuidae) in the Hawaiian Islands, with a key to the species in the genus. Inter. J. Entomol. 25: 316-20.
93. Goff, M.L., J.O. Whitaker, Jr., & L.J. Barkley. 1984. A new species of *Loomisia* (Acari: Trombiculidae) from a Peruvian bat. J. Med. Entomol. 21: 80-81.
94. Goff, M.L. & J.O. Whitaker, Jr. 1984. A new genus of Leeuwenhoeekiinae (Acari: Trombiculidae) from cricetid rodents in Paraguay. J. Med. Entomol. 21: 31-33.
95. Goff, M.L. 1983. Two new species of *Austracarus* (Acari: Trombiculidae) from South Africa. J. Ent. Soc. Sth. Afr. 46: 335-40.
96. Goff, M.L. 1984. A new species of *Sasatrombicula* (Acari: Trombiculidae) from a horseshoe bat collected in Korea. Inter. J. Acarol. 10: 23-25.
97. Goff, M.L. & J.O. Whitaker, Jr. 1984. A new genus and two new species of schoengastine chiggers (Acari: Trombiculidae) from a cane mouse in Brazil. Inter. J. Entomol. 26: 162-66.
98. Goff, M.L. 1984. A new species of *Gahrlepiea* (Acari: Trombiculidae) from an Egyptian mole. J. Med. Entomol. 21: 137-39.
99. Goff, M.L. & J.O. Whitaker, Jr. 1984. A small collection of chiggers (Acari: Trombiculidae) from

- mammals collected in Paraguay. J. Med. Entomol. 21: 327-35.
100. Goff, M.L. 1984. Three new species and new records of chiggers (Acari: Trombiculidae) from the Northwestern Hawaiian Islands. J. Med. Entomol. 21: 257-62.
 101. Conant, S., C.C. Christensen, P. Conant, W.C. Gagne & M.L. Goff. 1984. The unique terrestrial biota of the Northwestern Hawaiian Islands. Proc. Res. Inv. NWHI: 77-94.
 102. Goff, M.L. 1984. Studies on Papua New Guinea chiggers (Acari: Trombiculidae). XII. A new species of *Gahrlepiea* from the long-footed melomys. J. Med. Entomol. 21: 524-26.
 103. Goff, M.L. 1984. A new species of *Gahrlepiea* (Acari: Trombiculidae) from a shrew-hedgehog (Insectivora) in China. J. Med. Entomol. 21: 690-91.
 104. Goff, M.L. 1983. *Tateracarus quadrisetosus* n. gen., n. sp. (Acari: Trombiculidae, Leeuwenhoeikiinae) from *Tatera leucogaster* (Peters, 1852) (Mamm. Rodentia) in Namibia, Africa. Bull. Inst. R. Sci. Nat. Belg. 55(7): 1-4.
 105. Goff, M.L. & F.S. Lukoschus. 1983. A new genus of chigger (Acari: Trombiculidae) from an elephant shrew (Mammalia: Insectivora) in Namibia, Africa. Bull. Inst. R. Sci. Nat. Belg. 55(8): 1-4.
 106. Goff, M.L. 1983. A new genus and species of Apoloniinae (Acari: Trombiculidae) from South Africa with a key to the species in the subfamily. Bull. Inst. R. Sci. Nat. Belg. 55(9): 1-5.
 107. Goff, M.L. 1984. Distribution of trombiculid vectors for chigger-borne rickettsiosis in Papua New Guinea. In: Griffiths & Bowman, eds., *Acarology 2*, vol. 2, Ellis Horwood, Ltd., Chichester. p.1114-19.
 108. Diaz Patxot, J. & M.L. Goff. 1985. Two new species and new records of Cheyletidae (Acari) in Hawaii with a key to the species. Inter. J. Acarol. 11: 157-62.
 109. Goff, M.L. & R.M./ Timm. 1985. A new species of *Peltoculus* (Acari: Trombiculidae) from Ecuador. Inter. J. Acarol. 11: 233-35.
 110. Swift, S.F., U. Gerson & M.L. Goff. 1985. A new species of *Eustigmaeus* (Acari: Prostigmata: Stigmaeidae) from Kaua'i Island, Hawaiian Islands. Inter. J. Entomol. 27: 375-81.
 111. Goff, M.L. 1986. A new species of *Steneotarsonemus* (Acari: Tarsonemidae) from the island of Hawaii, Hawaiian Islands. Inter. J. Acarol. 12:37-42.
 112. Goff, M.L. 1986. Spider mites (Acari: Tetranychidae) in the Hawaiian Islands. Inter. J. Acarol. 12: 43-49.
 113. Goff, M.L., M. Early, C.B. Odom & K. Tullis. 1986. A preliminary checklist of arthropods associated with exposed carrion in the Hawaiian Islands. Proc. Hawaii. Entomol. Soc. 26: 53-57.
 114. Goff, M.L., L.A. Durden & J.O. Whitaker, Jr. 1986. A new species of *Schoengastia* (Acari: Trombiculidae) from mammals collected in Sulawesi, Indonesia. Inter. J. Acarol. 12: 91-93.
 115. Fain, A. & M.L. Goff. 1986. *Psorergates rattus* (Acari: Psorergatidae), a new species of parasitic mite from *Rattus norvegicus* in Hawaii. Inter. J. Acarol. 12: 107-10.
 116. Goff, M.L., J.O. Whitaker, Jr. & J.M. Deitz. 1986. A new species of *Microtrombicula* (Acari: Trombiculidae) from the golden lion tamarin in Brazil. Inter. J. Acarol. 12: 171-73.
 117. Early, M. & M.L. Goff. 1986. Arthropod succession patterns in exposed carrion on the island of O'ahu, Hawaiian Islands, USA. J. Med. Entomol. 23: 520-31.
 118. van Riper, C., III, S.G. van Riper, M.L. Goff & M. Laird. 1986. The epizootiology and ecological significance of malaria in Hawaiian land birds. Ecol. Monog. 56: 327-44.
 119. Goff, M.L. 1986. A new species of *Neoschoengastia* (Acari: Trombiculidae) infesting bovids

(Mammalia: Artiodactyla) in Israel. Inter. J. Acarol. 12: 245-47.

120. Goff, M.L., R.B. Loomis & W.J. Wrenn. 1986. A chigger bibliography 1758-1984 (Acari: Trombiculidae): Systematics, biology and ecology. Bull. Soc. Vector Ecol. 11: 1-177.
121. Goff, M.L. 1986. In Memoriam: Dr. James M. Brennan (1905-1985). Proc. Hawaii. Entomol. Soc. 27: 22.
122. Webb, J.P., Jr., S.G. Bennett, W.J. Wrenn & M.L. Goff. 1986. In Memoriam: Dr. Richard B. Loomis 1925-1985. Bull. Soc. Vector Ecol. 11: iv-vi.
123. Goff, M.L. 1986. In Memoriam: Dr. James M. Brennan 1905-1985. Bull. Soc. Vector Ecol. 11: vii.
124. Swift, S.F. & M.L. Goff. 1987. The family Bdellidae (Acari: Prostigmata) in the Hawaiian Islands. Inter. J. Acarol. 13: 29-49.
125. Goff, M.L. 1987. A catalog of Acari of the Hawaiian Islands. HITAGR Res. Ext. Ser. 075: 1-75.
126. Goff, M.L. & C.B. Odom. 1987. Forensic entomology in the Hawaiian Islands: Three case studies. Amer. J. Forensic Med. Pathol. 8: 45-50.
127. Goff, M.L., J.O. Whitaker, Jr. & J.M. Dietz. 1987. The genus *Speleocola* (Acari: Trombiculidae), with description of a new species from Brazil and a key to the species. J. Med. Entomol. 24: 198-200.
128. Tullis, K. & M.L. Goff. 1987. Arthropod succession in exposed carrion in a tropical rainforest on O'ahu Island, Hawai'i. J. Med. Entomol. 24: 332-39.
129. Goff, M.L. 1987. A new species of *Trombiculindus* (Acari: Trombiculidae) from *Soriculus caudatus* (Insectivora: Soricidae) in Nepal. Inter. J. Acarol. 13: 101-03.
130. Goff, M.L. 1987. A new species of *Sasacarus* (Acari: Trombiculidae) from a shrew (Insectivora: Soricidae) in Panama. Inter. J. Acarol. 13: 105-07.
131. Goff, M.L., J.T. Baccus & A.G. Cleveland. 1987. A new species of *Trombigastia* (Acari: Trombiculidae) from a horseshoe bat collected in China. Inter. J. Acarol. 13: 149-51.
132. Goff, M.L., C.B. Odom & M. Early. 1986. Estimation of post-mortem interval by entomological techniques: A case study from Oahu, Hawaii. Bull. Soc. Vector Ecol. 11: 242-46.
133. Goff, M.L. & L.A. Durden. 1987. A new species and new records of chiggers (Acari: Trombiculidae) from North Sulawesi, Indonesia. Inter. J. Acarol. 13: 209-11.
134. Goff, M.L. 1987. The genera *Hoffmannina* and *Crotiscus* (Acari: Trombiculidae), with descriptions of two new Peruvian species from *Lestoros inca* (Marsupialia: Caenolestidae). Ann. Entomol. Soc. Amer. 80:809-13.
135. Goff, M.L., C.E. Yunker & T.A. Wheeler. 1987. *Brennanacarus*, nomen novum for *Nasicola* Brennan & Yunker, 1969 (Acari: Trombiculidae), with redescription of *B. annereauxi* (Brennan & Yunker, 1969). J. Med. Entomol. 24: 696-98.
136. Brown, W.A., M.L. Goff & M. Nadchatram. 1988. The bat-infesting genus *Rudnicula* (Acari: Trombiculidae), with description of a new species from the Philippine Islands and a key to the species. J. Med. Entomol. 25: 17-19.
137. Goff, M.L. 1988. A new species of chigger (Acari: Trombiculidae) from a vampire bat (Chiroptera: Desmodontidae) collected in Costa Rica. Inter. J. Acarol. 14: 5-7.
138. Goff, M.L., R.B. Loomis & R. Ainsworth. 1987. Redescription of *Neotrombicula naultini* (Dumbleton, 1947) and descriptions of two new species of chiggers from New Zealand (Acari: Trombiculidae). New Zealand J. Zool. 14: 385-90.
139. Brown, W.A. & M.L. Goff. 1988. Chigger mites (Acari: Trombiculidae) of Leyte Islands, Philippine Islands with descriptions of five new species and a key to the genera and species. J. Med.

Entomol. 25: 214-23.

140. Goff, M.L., A.I. Omori & K. Gunatilake. 1988. Estimation of postmortem interval by arthropod succession: Three case studies from the Hawaiian Islands. Amer. J. Forensic Med. Pathol. 9: 220-25.
141. Brown, W.A. & M.L. Goff. 1988. Three new species of chiggers (Acari: Trombiculidae) from the Philippine Islands. Inter. J. Acarol. 14: 115-19.
142. Goff, M.L. 1988. Gamasid mites as potential indicators of postmortem interval. In: Channabasavanna, G.P. & Viraktamath, C.A., eds., Progress in Acarology, vol.1, Oxford & IBH Publ. Co., Pvt, Ltd, New Delhi. P.443-50.
143. Goff, M.L., A.I. Omori & J.R. Goodbrod. 1989. Effect of cocaine in tissues on the development rate of *Boettcherisca peregrina* (Diptera: Sarcophagidae). J. Med. Entomol. 26: 91-93.
144. Gunatilake, K. & M.L. Goff. 1989. Detection of organophosphate poisoning in a putrefying body by analyzing arthropod larvae. J. Forensic Sci. 34: 714-16.
145. Goff, M.L. & J.P. Webb, Jr. 1989. A new genus and species of Leeuwenhoekiinae (Acari: Trombiculidae) from rodents collected in Chile, and a key to the New World genera of Leeuwenhoekiinae. Inter. J. Acarol. 15: 75-78.
146. Goff, M.L. & J.P. Webb, Jr. 1989. A new species of *Paraguacarus* (Acari: Trombiculidae) from a degu (Mammalia: Rodentia) collected in Chile. Bull. Soc. Vector Ecol. 14: 93-94.
147. Goff, M.L. 1989. Catalog of types in the National Chigger Collection of the U.S. National Museum of Natural History, Smithsonian Institution (Acari: Trombiculidae). Bull. Soc. Vector Ecol. 14: 95-134.
148. Goff, M.L., P.R. Sievert & L. Sileo. 1989. New species of Apoloniinae (Acari: Trombiculidae) from the Laysan albatross taken in the Midway Islands and a key to the species of Apoloniinae of the world. J. Med. Entomol. 26: 484-86.
149. Goff, M.L. & D. Gettinger. 1989. Two new species of schoengastine chiggers (Acari: Trombiculidae) from Brazil and rediagnosis of *Arisocerus* Brennan, 1970. J. Med. Entomol. 26: 554-58.
150. Goff, M.L. & E.R. Easton. 1989. Two new species and new records of chiggers (Acari: Trombiculidae) collected from mammals and reptiles in Papua New Guinea. Inter. J. Acarol. 15: 235-39.
151. Goodbrod, J.R. & M.L. Goff. 1990. Effects of larval population density on rates of development and interactions between two species of *Chrysomya* (Diptera: Calliphoridae) in laboratory culture. J. Med. Entomol. 27: 338-43.
152. Goff, M.L. 1990. A new species of *Microtrombicula* (Acari: Trombiculidae) from bats (Chiroptera: Pteropidae) collected in Indonesia. Inter. J. Acarol. 16: 175-77.
153. Goff, M.L. 1990. A new species of *Austracarus* (Acari: Trombiculidae) from a South African steinbok (Mammalia: Artiodactyla). Inter. J. Acarol. 16: 201-03.
154. Goff, M.L., W.A. Brown, K.A. Hewadikaram & A.I. Omori. 1991. Effect of heroin in decomposing tissues on the development rate of *Boettcherisca peregrina* (Diptera: Sarcophagidae) and implications of this effect on estimation of postmortem intervals using arthropod development patterns. J. Forensic Sci. 36: 537-42.
155. Goff, M.L. & M.M. Flynn. 1991. Determination of postmortem interval by arthropod succession: A case study from the Hawaiian Islands. J. Forensic Sci. 36: 607-14.
156. Goff, M.L. 1991. Comparison of insect species associated with decomposing remains recovered inside dwellings and outdoors on the island of Oahu, Hawaii. J. Forensic Sci. 36: 748-53.

157. Goff, M.L. & D. Gettinger. 1991. Two new species of chiggers (Acari: Trombiculidae) from small mammals collected in Brazil. J. Med. Entomol. 28: 401-04.
158. Goff, M.L. 1991. Feast of clues: Insects in the service of forensics. The Sciences 31: 30-35.
159. Hewadikaram, K.A. & M.L. Goff. 1991. Effect of carcass size on rate of decomposition and arthropod succession patterns. Amer. J. Forensic Med. Pathol. 12: 235-40.
160. Goff, M.L., S. Charbonneau & W. Sullivan. 1991. Presence of fecal material in diapers as a potential source of error in estimations of postmortem interval using arthropod development rates. J. Forensic Sci. 36: 1603-06.
161. Catts, E.P. & M.L. Goff. 1991. Forensic entomology in criminal investigations. Annu. Rev. Entomol. 37: 253-72.
162. Goff, M.L. & E.R. Easton. 1991. A new species of *Whartonia* (Acari: Trombiculidae) from *Hipposideros pomona* (Chiroptera: Hipposideridae) taken in New Territories, Hong Kong. Inter. J. Acarol. 17: 251-53.
163. Goff, M.L. 1992. Feast of clues: Insects in the service of science. Pest Contr. Technol. 20: 26.
164. Goff, M.L., W.A. Brown & A.I. Omori. 1992. Preliminary observations of the effect of methamphetamine in decomposing tissues on the development rate of *Parasarcophaga ruficornis* (Diptera: Sarcophagidae) and implications of this effect on the estimations of postmortem intervals. J. Forensic Sci. 37: 867-72.
165. Schoenly, K., M.L. Goff & M. Early. 1992. A BASIC algorithm for calculating postmortem interval from arthropod successional data. J. Forensic Sci. 37: 808-23.
166. Goff, M.L. 1991. Use of Acari in establishing a postmortem interval in a homicide case on the island of Oahu, Hawaii. In: Dusbabek, F. & V. Bukva, eds., *Modern Acarology*, vol. 1, Academia Prague & SPB Academic Publishing bv, The Hague. p. 439-42.
167. Goff, M.L. 1992. A new species of *Eusaperium* (Acari: Trombiculidae) from an Incan "rat" opossum, *Lestoros inca* (Marsupialia: Caenolestidae) in Peru. Bull. Soc. Vector Ecol. 17: 38-40.
168. Goff, M.L. 1992. Problems in estimation of postmortem interval resulting from wrapping of the corpse: A case study from Hawaii. J. Agric. Entomol. 9: 237-43.
169. Goff, M.L. 1992. The genus *Parasecia* (Acari: Trombiculidae), with description of a new species from Mexico. J. Med. Entomol. 29: 965-67.
170. Goff, M.L., W.A. Brown, A.I. Omori & D.A. LaPointe. 1993. Preliminary observations of the effects of amitriptyline in decomposing tissues on the development of *Parasarcophaga ruficornis* (Diptera: Sarcophagidae) and implications of this effect to estimation of postmortem interval. J. Forensic Sci. 38: 316-22.
171. Goff, M.L., W.A. Brown, A.I. Omori & D.A. LaPointe. 1994. Preliminary observations of the effects of phencyclidine in decomposing tissues on the development of *Parasarcophaga ruficornis*. J. Forensic Sci. 39: 123-28.
172. Lord, W.D., M.L. Goff, T.R. Adkins & N.H. Haskell. 1994. The black soldier fly *Hermetia illucens* (Diptera: Stratiomyidae) as a potential measure of human postmortem interval: Observations and case histories. J. Forensic Sci. 39: 215-22.
173. Goff, M.L. & W.D. Lord. 1994. Entomotoxicology: A new area for forensic investigation. Amer. J. Forensic Med. Pathol. 15: 51-57.
174. Goff, M.L. 1994. Estimation of postmortem interval using arthropod development and successional patterns. Forensic Sci. Rev. 5: 81-94.
175. Goff, M.L. & W.D. Lord. 1994. Entomotoxicology: Use of insects as toxicological indicators - Recent

advances. In: Proc. International Symposium on the Forensic Aspects of Trace Evidence, Forensic Science Research and Training Center, FBI Academy, Quantico, 24-28 June 1991. pp. 113-22.

176. Miller, M.L., W.D. Lord, M.L. Goff, B. Donnelly, E.T. McDonough & J.C. Alexis. 1994. Isolation of amitriptyline and nortriptyline from fly puparia (Phoridae) and beetle exuviae (Dermestidae) associated with mummified human remains. J. Forensic Sci. 39: 1305-13.
177. Goff, M.L. 1995. New species of Neotrombicula (Acari: Trombiculidae) from African Primates (Galagidae and Ceropithicidae). J. Med. Entomol. 32: 12-15.
178. Goff, M.L. & D. Gettinger. 1995. A new genus and six new species of chiggers (Acari: Trombiculidae and Leeuwenhoeikiidae) collected from small mammals in Argentina. J. Med. Entomol. 32: 439-48.
179. Schoenly, K., M.L. Goff, J.D. Wells & W.D. Lord. 1996. Quantifying statistical uncertainty in succession-based entomological estimates of the postmortem interval in death scene investigations: a simulation study. Amer. Entomol. 42(2): 106-12.
180. Goff, M.L., M.L. Miller, J.D. Paulson, W.D. Lord, E. Richards & A.I. Omori. 1997. Effects of 3,4-methylenedioxymethamphetamine in decomposing tissues on the development of *Parasarcophaga ruficornis* (Diptera: Sarcophagidae) and detection of the drug in postmortem blood, liver tissue, larvae and puparia. J. Forensic Sci. 42: 275-79.
181. Yoshimoto, C.M. & M.L. Goff 1997. External ophtalmomyiasis: review and clinical management of a disease established in Hawaii. Hawaii Med. J. 56: 10-112.
182. Richards, E.N. & M.L. Goff. 1997. Arthropod succession on exposed carrion in three contrasting tropical habitats on Hawaii Island, Hawaii. J. Med. Entomol. 34: 328-39.
183. Goff, M.L. & W.D. Lord. 1997. Insects as toxicological evidence. In: Proc. Inter. Symposium on Forensic Toxicology, FBI Academy, Quantico, Virginia, June 15-19, 1992. pp. 105-17.
184. Goff, M.L. & R. McKown. 1997. The genus *Hexidionis* (Acari: Trombiculidae) with the description of a new species from Texas. J. Med. Entomol. 34: 438-40.
185. Goff, M.L. & B.H. Win. 1997. Estimation of postmortem interval based on colony development time for *Anoplolepis longipes* (Hymenoptera: Formicidae). J. Forensic Sci. 42: 1176-79.
186. Avila, F.W. & M.L. Goff. 1998. Arthropod succession patterns onto burnt carrion in two contrasting habitats in the Hawaiian Islands. J. Forensic Sci. 43: 581-86.
187. Goff, M.L. & A. Saboori. 1998. Two new species of chiggers (Acari: Trombiculidae and Leeuwenhoeikiidae) from Iran. J. Med. Entomol. 35: 857-60.
188. Goff, M.L. 1999. The current state of chigger systematics: a view from a swamp 20 km SSE of Eden. Proc. 9th International Congress of Acarology. p. 145-49.
189. Davis, J.B. & M.L. Goff. 2000. Decomposition patterns in terrestrial and intertidal habitats on O'ahu Island and Coconut Island, Hawai'i. J. Forensic Sci. 45: 824-30.
190. Goff, M.L. 2000. *A Fly for the Prosecution*. Harvard University Press, Cambridge, MA. 224 pp.
191. Shalaby, O.A., L.M.L. de Carvalho & M.L. Goff 2000. Comparison of patterns of decomposition in a hanging carcass and a carcass in contact with soil in a xerophytic habitat on the island of O'ahu, Hawai'i. J. Forensic Sci. 45: 1267-73.
192. Goff, M.L. & W.D. Lord. 2000. Entomotoxicology. In: Entomological Evidence: Utility of Arthropods in Legal Investigations, J.H. Byrd & J. Castner, eds. CRC Press, Boca Raton, FL. pp. 331-40.
193. Hédouin, V., B. Bourel, L. Martin-Bouyer, A. Bécart, G. Tournel, M. Deveraux, M.L. Goff & D.

- Gosset. 2001. Determination of drug levels in larvae of *Protophormia terraenovae* and *Calliphora vicina* (Diptera: Calliphoridae) reared on rabbit carcasses containing morphine. J. Forensic Sci. 46: 12-14.
194. Gilardi, K.V., J.D. Gilardi, A. Frank, M.L. Goff & W.M. Boyce. 2001. Epidermoptid mange in Laysan Albatross fledglings in Hawaii. J. Wildlife Diseases 37: 185-88.
 195. Swift, S.F. & M.L. Goff. 2001. Mite (Acari) communities associated with O'hia, *Metrosideros polymorpha* (Myrtaceae) at Hono O Nā Pali and Kui'a Natural Area Reserves on Kaua'i Island, Hawaiian Islands. Pacific Sci. 55: 23-40.
 196. Bourel, B., L. Fleurisse, V. Hedouin, J.-C. Cailliez, C. Creusy, M.L. Goff & D. Gosset. 2001. Immunohistochemical contribution to the study of morphine metabolism in Calliphoridae larvae and implications in forensic entomotoxicology. J. Forensic Sci. 46: 596-99.
 197. Bourel, B., G. Tournel, V. Hedouin, V., M. Deveaux, M.L. Goff & D. Gosset. 2001. Determination of drug levels in two species of necrophagous Coleoptera reared on substrates containing morphine. J. Forensic Sci. 46: 600-03.
 198. Richardson, M.S. & M.L. Goff. 2001. Effects of temperature and intraspecific interaction on the development of *Dermestes maculatus* DeGeer (Coleoptera: Dermestidae). J. Med. Entomol. 38: 347-51.
 199. Introna, F., C.P. Campobasso & M.L. Goff. 2001. Entomotoxicology. Inter. J. Forensic Sci. 120: 42-47.
 200. Bourel, B., G. Tournel, V. Hedouin, V., M. Deveaux, M.L. Goff & D. Gosset. 2001. Morphine extraction in necrophagous insects remains for determining ante-mortem opiate intoxication. Inter. J. Forensic Sci. 120: 127-31.
 201. Goff, M.L. 2002. Forensic Entomology. In: McGraw-Hill Yearbook of Science and Technology. pp. 117-19.
 202. Goff, M.L., C.M. Ritzi & C.L. Hice. 2002. A new species of *Polylopadium* Brennan & Jones, 1961 (Acari: Trombiculidae) from cricetid rodents in Peru with description of a new character for the genus and a key to the species. J. Med. Entomol. 39: 275-77.
 203. Wells, J.D., M.L. Goff, J.K. Tomberland & H. Kurahashi. 2002. Molecular systematics of the endemic Hawaiian blowfly genus *Dyscritomyia* Grimshaw (Diptera: Calliphoridae). Med. Entomol. Zool. 53(suppl. 2): 231-38.
 204. Goff, M.L. 2003. Forensic Entomology. In: Encyclopedia of Insects. Academic Press, San Diego. pp. 437-42.
 205. DiZinno, J.A., W.D. Lord, M.B. Collins-Morton, M.R. Wilson & M.L. Goff. 2002. Mitochondrial DNA sequencing of beetle larvae (Nitidulidae: Omosita) recovered from human bone. J. Forensic Sci. 47: 1337-39.
 206. Lord, W.D. & M.L. Goff. 2003. Forensic entomology: application of entomological methods to the investigation of death. In: Froede, R.C., Ed. Handbook of Forensic Pathology, 2nd edition. College of American Pathologists, Northfield, Illinois. pp. 423-36.
 207. Goff, M.L. 2003. The maggot and the law. In: Being Human: science, culture and fear. The Royal Society of New Zealand. Misc. Ser. 63: 45-51.
 208. Nystrom, K.C., A. Goff & M.L. Goff. 2005. Mortuary behavior reconstruction through paleoentomology: A case study from Peru. Inter. J. Osteoarchaeology. 15: 1-11.
 209. LaPointe, D.A., M.L. Goff & C.T. Atkinson. 2005. Comparative susceptibility of introduced forest-dwelling mosquitoes in Hawai'i to avian malaria, *Plasmodium relictum*. J. Parasitol. 91: 66-72
 210. Goff, M.L. 2005 Entomology. Payne-James, J., R.W. Byard, T.S. Corey & C. Henderson, eds.,

Encyclopedia of Forensic and Legal Medicine, Elsevier Acad. Press. pp. 263-267.

211. Freed, L.A., R.L. Cann, M.L. Goff, W.A. Kuntz & G.R. Bodner. 2005. Increase in Avian Malaria at Upper Elevation in Hawai'i. *The Condor* 107: 753-64.
212. Carvalho, L.M.L., P.J. Thyssen, M.L. Goff & A.X. Linhares. 2004. Observations on succession patterns of necrophagous insects on a pig carcass in an urban area of southeastern Brazil. *Forensic Med. Toxicol.* 5(1): 33-39.
213. Goff, M.L. 2005. Entomology. Payne-James, J., R.W. Byard, T.S. Corey & C. Henderson, eds., *Encyclopedia of Forensic and Legal Medicine*, Elsevier Acad. Press. pp. 263-267
214. Uchida, G.K., B.E. Mackey, R.L. Vargas, J.W. Beardsley, D.E. Hardy, M.L. Goff & J.D. Stark. 2006. Response of nontarget insects to methyl eugenol, Cue-Lure, Trimedlure and protein bait bucket traps on Kauai Island, Hawaii, USA. *Proc. Hawaii. Entomol. Soc.* 38:61-72.
215. Goff, M.L. 2009. Forensic Entomology. In: Resh, V.H. & R.T. Carde. *Encyclopedia of Insects*, 2nd, ed., Academic Press, San Diego. Pp 381-86.
216. Goff, M.L. 2009. Early Postmortem Changes and Stages of Decomposition in Exposed Cadavers. *Exp. Appl. Acarol.* 49: 21-36.
217. LaPointe, D.A. & M.L. Goff. 2008. Altitudinal distribution, abundance, and parity of *Culex quinquefasciatus* (Diptera: Culicidae) and its relevance to the transmission of *Plasmodium relictum* (Haemosporidia: Plasmodiidae) in a Hawaiian rainforest. *J. Med. Entomol.* (In press)
218. Goff, M.L., C. Campobasso & M. Gherardi. 2010. Forensic Implications of Myiasis. In: Amendt, J.M., Grassberger, C., Campobasso, C. & Goff, M.L., eds. *Advances in Forensic Entomology*, Springer, The Hague
219. Goff, M.L. 2010. Early Postmortem Changes and Stages of Decomposition. In: Amendt, J.M., Grassberger, C., Campobasso, C. & Goff, M.L., ed *Advances in Forensic Entomology*, Springer, The Hague
220. Perotti, M.A., Braig, H.R. Goff, M.L. 2010. Phoretic mites and carcasses: Acari transported by organisms associated with animal and human remains. In: Amendt, J.M., Grassberger, C., Campobasso, C. & Goff, M.L., eds. *Advances in Forensic Entomology*, Springer, The Hague
221. LaPointe, D.A., M.L. Goff & C.T. Akinson. 2010 Thermal constraints to the sporogonic development and altitudinal distribution of avian malaria *Plasmodium relictum* in Hawai'i. *J. Parasitol.* 318-24.
222. Goff, M.L. 2011. Forensic Entomology. In: Mozayani, A. & C. Nozigla, eds. *The Forensic Laboratory Handbook Procedures and Practice*, 2nd edition. Humana Press, Springer Science + Business Media, New Yprk. Pp.447-78.
223. Goff, M.L. 2012. Crime Scene Bugs. In: Carde, R.T. & V.H. Resh, eds. *A World of Insects*, The Harvard University Press Reader. Harvard University Press, Cambridge, MA. Pp. 302-13
224. Bennett, S.G., D.A. Crossley, L.A. Durden & M.L. Goff 2014 *Eutrombicula cinnabaris* (Ewing, 1920) (Acari: Trombiculidae) is the common pest chigger mite of the Eastern United States. *J. Entomol. Sci.* 49(4):413-14.
225. Rysavy, N.M. M. L. Goff. 2014 Preliminary observations of arthropods associated with buried carrion on O'ahu. *J. Forensic Sci.* 60:462-67.
226. Goff, M.L. 2014. Entomology. In: J. Payne-James and R. Byard, eds. *Encyclopedia of Forensic and Legal Medicine* 2nd edition. Elsevier Acad. Press.
227. Barnard, K., B.R. Krasnov, M.L. Goff & S. Matthee 2015. Infracommunity dynamics of chiggers

(Trombiculidae) parasitic on a rodent. Systematic Parasitol. 142:1695-11

Books:

Goff, M.L. 2000. *A Fly for the Prosecution*. Harvard University Press, Cambridge, MA. 224 pp.
Translated into Spanish, Japanese, Korean and Chinese

2002. *El testimonio de las moscas Como los insectos ayudana resolver crímenes* (Spanish Translation) Alba Editorial, Barcelona. 267 pp.

Amendt, J.M., M. Grassberger, C. Campobasso, M.L. Goff, eds. 2010. *Advances in Forensic Entomology*. Springer, The Hague, 376 pp.

EXHIBIT 10



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not meet the definition of critical habitat.

- In addition, Department of Defense lands on Naval Station Pearl Harbor Lualualei Branch (NAVMAG PH Lualualei) and Naval Radar Transmittal Facility at Lualualei (NRTF Lualualei) (380 acres; 154 hectares) with a completed and effective integrated natural resource management plan (INRMP) have been exempted from this final designation under section 4(a)(3) of the Act.

- All lands being designated as critical habitat are either (1) currently considered to be occupied by one or more of the 124 species, and contain physical or biological features essential to the conservation of the species by supporting the life-history needs of the species and that may require special management, or (2) areas outside the geographical areas occupied by the species at the time of listing, which the Secretary has determined are essential for the conservation of the species.

Peer reviewers support our methods. We obtained opinions from knowledgeable individuals with scientific expertise to review our technical assumptions, analysis, and whether or not we had used the best available information. These peer reviewers generally concurred with our methods and conclusions and provided additional information, clarifications, and suggestions to improve this final rule.

Previous Federal Actions

Federal actions for these species prior to August 2, 2011, are outlined in our proposed rule (76 FR 46362), which was

published on that date. Publication of the proposed rule opened a 60-day comment period, which closed on October 3, 2011. In addition, we published a public notice of the proposed rule on August 6, 2011, in the local Honolulu Star Advertiser newspaper. On April 12, 2012 (77 FR 21936) we made available the draft economic analysis (DEA) on proposed critical habitat designation, and opened a 30-day comment period on the DEA, as well as reopened the comment period on the entire August 2, 2011 proposed rule (76 FR 46362). This second comment period closed on May 14, 2012.

Background

An Ecosystem-Based Approach To Listing 23 Species on Oahu

On the island of Oahu, as on most of the Hawaiian Islands, native species that occur in the same habitat types (ecosystems) depend on many of the same biological features and on the successful functioning of that ecosystem to survive. We have therefore organized the species addressed in this final rule by common ecosystems. Although the listing determination for each species is analyzed separately, we have organized the specific analysis for each species within the context of the broader ecosystem in which it occurs, to avoid redundancy. In addition, native species that share ecosystems often face a suite of common factors that may pose threats to them, and ameliorating or eliminating these threats requires similar management actions. Effective management of these threats often requires implementation of conservation

actions at the ecosystem scale, to enhance or restore critical ecological processes and provide for long-term viability of those species in their native environment. Thus, by taking this approach, we hope not only to organize this rule efficiently, but also to more effectively focus conservation management efforts on the common threats that occur across these ecosystems, restore ecosystem functionality for the recovery of each species, and provide conservation benefits for associated native species, thereby potentially precluding the need to list other species under the Act (16 U.S.C. 1531 *et seq.*) that occur in these shared ecosystems.

We are listing *Bidens amplexans*, *Cyanea calycina*, *Cyanea lanceolata*, *Cyanea purpurellifolia*, *Cyrtandra gracilis*, *Cyrtandra kaulantha*, *Cyrtandra sessilis*, *Cyrtandra waiolani*, *Doryopteris takeuchii*, *Korthalsella degeneri*, *Melicope christophersenii*, *Melicope hiiakae*, *Melicope makahae*, *Platydesma cornuta* var. *cornuta*, *Platydesma cornuta* var. *decurrens*, *Pleomele forbesii*, *Psychotria hexandra* ssp. *oahuensis*, *Pteralyxia macrocarpa*, *Tetraplasandra lydgatei*, and *Zanthoxylum oahuense*; and the blackline (*Megalagrion nigrohamatum nigrolineatum*), crimson (*M. leptodemas*), and oceanic (*M. oceanicum*) Hawaiian damselflies, endemic to the island of Oahu, as endangered species. These 23 species (20 plants and 3 damselflies) are found in 7 ecosystem types: coastal, lowland dry, lowland mesic, lowland wet, montane wet, dry cliff, and wet cliff (Table 1).

TABLE 1—THE 23 SPECIES AND THE ECOSYSTEMS UPON WHICH THEY DEPEND

Ecosystem	Species
Coastal	Plants: <i>Bidens amplexans</i> .
Lowland Dry	Plants: <i>Bidens amplexans</i> , <i>Doryopteris takeuchii</i> , <i>Pleomele forbesii</i> .
Lowland Mesic	Plants: <i>Cyanea calycina</i> , <i>Cyanea lanceolata</i> , <i>Melicope makahae</i> , <i>Platydesma cornuta</i> var. <i>decurrens</i> , <i>Pleomele forbesii</i> , <i>Pteralyxia macrocarpa</i> , <i>Tetraplasandra lydgatei</i> Animals: oceanic Hawaiian damselfly.
Lowland Wet	Plants: <i>Cyanea calycina</i> , <i>Cyanea lanceolata</i> , <i>Cyanea purpurellifolia</i> , <i>Cyrtandra gracilis</i> , <i>Cyrtandra kaulantha</i> , <i>Cyrtandra sessilis</i> , <i>Cyrtandra waiolani</i> , <i>Melicope hiiakae</i> , <i>Platydesma cornuta</i> var. <i>cornuta</i> , <i>Psychotria hexandra</i> ssp. <i>oahuensis</i> , <i>Pteralyxia macrocarpa</i> , <i>Zanthoxylum oahuense</i> Animals: blackline Hawaiian damselfly, crimson Hawaiian damselfly, oceanic Hawaiian damselfly.
Montane Wet	Plants: <i>Cyanea calycina</i> , <i>Melicope christophersenii</i> .
Dry Cliff	Plants: <i>Korthalsella degeneri</i> , <i>Melicope makahae</i> , <i>Platydesma cornuta</i> var. <i>decurrens</i> , <i>Pleomele forbesii</i> , <i>Pteralyxia macrocarpa</i> .
Wet Cliff	Plants: <i>Cyanea calycina</i> , <i>Cyanea purpurellifolia</i> , <i>Cyrtandra kaulantha</i> , <i>Cyrtandra sessilis</i> , <i>Melicope christophersenii</i> , <i>Psychotria hexandra</i> ssp. <i>oahuensis</i> , <i>Pteralyxia macrocarpa</i> Animals: crimson Hawaiian damselfly, oceanic Hawaiian damselfly.

Most of these species are found in multiple ecosystems. For each species, we identified and evaluated those factors that pose threats to the species

and that may be common to all of the species at the ecosystem level (see discussion below in Summary of Factors Affecting the 23 Species). For example,

climate change is considered a threat to each species within each ecosystem. As a result, this threat factor is considered to be a multiple ecosystem threat, as

each individual species within each ecosystem faces a threat that is essentially identical in terms of the nature of the impact, its severity, its imminence, and its scope. We further identified and evaluated any threat factors that may be unique to certain species, that is, threat factors that do not apply to all species under consideration within the same ecosystem. For example, the threat of predation by nonnative fish is unique to the three damselflies in this rule; it is not applicable to any of the other species being listed. We have identified such threat factors, which apply only to certain species within the ecosystems addressed here, as species-specific threats.

An Ecosystem-Based Approach to Determining Physical or Biological Features of Critical Habitat

Under the Act, we are required to designate critical habitat to the maximum extent prudent and determinable concurrently with the publication of a final determination that a species is endangered or threatened. In this rule, we are designating critical habitat for the 23 Oahu species which we have found to meet the definition of an endangered species. We are also designating critical habitat for two Oahu plants that are already listed as endangered species but for which critical habitat has not been previously designated. In addition, we are revising critical habitat for 99 Oahu plants already listed as endangered or threatened species. When critical habitat was designated for these 99 Oahu plant species in 2003 (68 FR 35950; June 17, 2003), it was based primarily on the specific localities where the species were known to occur. We are revising critical habitat for these species because since then, we have learned that many native Hawaiian plants and animals can thrive when reintroduced into historical habitats when threats are effectively managed. For this reason, we believe it is important to designate unoccupied habitat where it is essential for the recovery of the species. Based on new information on plant occurrences and a better understanding of the species' biological requirements, the physical or biological features have been more precisely identified, and now include elevation, precipitation, substrate, canopy, subcanopy, and understory characteristics. We believe the added precision will be helpful in identifying the special management considerations or protections needed in specific occupied areas to recover the species. In addition, because the 2003 designation

focused on discrete areas occupied by the species at the time of listing, the result was an overlapping and confusing patchwork of critical habitat areas for the 99 plant species that was difficult for the public to interpret. Although this revision of critical habitat is solely based on our determination of the lands that meet the statutory definition of critical habitat (16 U.S.C. 1532(5) and other applicable provisions (e.g., 16 U.S.C. 1533(4)(b)(2)), we believe the end result will provide for greater public understanding of the conservation and recovery needs of each of the species in the specific areas addressed in this rule.

In this rule, we are designating critical habitat for 124 species in 62 multiple-species critical habitat units. Although critical habitat is identified for each species individually, we have found that the conservation of each depends, at least in part, on the successful functioning of the physical or biological features of the commonly shared ecosystem. Each critical habitat unit identified in this rule contains the physical or biological features essential to the conservation of those individual species that occupy that particular unit, or contains areas essential to the conservation of those individual species that do not presently occupy that particular unit, but depend on that ecosystem type for recovery purposes. Where the unit is not known to be occupied by a particular species, we believe it is still essential for the conservation of that species. The designation of unoccupied habitat allows for the expansion of its range and reintroduction of individuals into areas where it occurred historically, and provides areas for recovery in the case of a stochastic event at one or more locations where the species occurs.

Each of the designated areas represents critical habitat for multiple species, based upon their shared habitat requirements, and takes into account any species-specific conservation needs as appropriate (see discussion below in Methods). For example, the presence of a perennial stream is essential for the conservation of the blackline Hawaiian damselfly, but is not a requirement shared by all species within the same ecosystem; however, a functioning ecosystem is also essential to the damselfly because the ecosystem provides other physical or biological features that support the damselfly's specific life-history requirements.

The Island of Oahu

The island of Oahu is the third oldest and third largest of the eight main Hawaiian Islands, located southeast of Kauai and northwest of Molokai and

Lanai (Foote *et al.* 1972, p. 19; Department of Geography, University of Hawaii at Hilo (UHH) 1998, pp. 7–10). It was formed from two shield volcanoes, the Koolau Volcano and the Waianae Volcano, that ceased erupting about 1 to 2 million years ago, and is about 600 square (sq) miles (mi) (1,557 sq kilometers (km)) in area (Macdonald and Abbot 1970, p. 265; Foote *et al.* 1972, p. 19; Department of Geography, UHH 1998, pp. 7–10; Rowland and Garcia 2004, p. 1). Two mountain ranges resulted from these eruptions, the western Waianae range and eastern Koolau range. Oahu is characterized by the fact that the two mountain ranges are aligned perpendicular to the prevailing trade winds, so that distinctive leeward and windward climates result, with the Waianae range in the rain shadow of the Koolau range (Department of Geography, UHH 1998, pp. 7–10; Wagner *et al.* [adapted from Price (1983) and Carlquist (1980)] 1999, p. 39). The maximum elevation on Oahu is 4,025 feet (ft) (1,225 meters (m)) at the summit of Mount Kaala in the Waianae Mountains, and this higher elevation area is not affected by the Koolau rain shadow (Blumenstock and Price 1972, p. 156; Wagner *et al.* [adapted from Price (1983) and Carlquist (1980)] 1999, pp. 39–41). The maximum elevation is relatively low compared to the higher Hawaiian Islands. Consequently, Oahu does not have dry alpine areas, as the mountains do not reach the height of the temperature inversion layer (Wagner *et al.* [adapted from Price (1983) and Carlquist (1980)] 1999, pp. 38, 40). Rainfall ranges from less than 20 inches (in) (50 centimeters (cm)) to more than 250 in (635 cm) per year (Department of Geography, UHH 1998, p. 7). Temperatures in the Hawaiian Islands differ by an average of 41 degrees Fahrenheit (°F) (22 degrees Celsius (°C)) throughout the year. Since temperature decreases with increasing elevation, microclimates range from tropical to sub-arctic across the island chain (Wagner *et al.* [adapted from Price (1983) and Carlquist (1980)] 1999, pp. 37–38), although the sub-arctic zone does not occur on Oahu.

The current soil classification system for the Hawaiian Islands distinguishes soil types based on their measurable physical and chemical properties, and environmental factors that influenced their formation. Widely ranging geological ages of rocks, different rates of weathering, and microclimates create these highly variable soils (Sherman 1972, pp. 205–207). Most soils are volcanic in origin; a few formed from organic material and sand (Foote *et al.*

1972, p. 1). On Oahu, sizable areas of highly weathered, red-colored oxisols (nutrient-poor soils, red or yellowish) occur on the Schofield Plateau; in contrast, the Koolau and Waianae mountain ranges have large areas of rocky, unweathered entisols (soils with few or no horizontal layers) due to erosion (Gavenda *et al.* 1998, p. 92).

Because of its age and relative isolation, species diversity and endemism are high in the Hawaiian archipelago (Gagne and Cuddihy 1999, p. 45). However, the flora and fauna of Oahu have undergone extreme alterations because of past and present land use and other activities. Land with rich soils was altered by the early Hawaiians and, more recently, converted to agricultural use (Gagne and Cuddihy 1999, p. 45) or pasture. Intentional and inadvertent introduction of alien plant and animal species has contributed to the reduction in range of native species on the island (throughout this rule, the terms "alien," "feral," "nonnative," and "introduced" all refer to species that are not naturally native to the Hawaiian Islands). Most of the taxa included in this rule persist on steep slopes, precipitous cliffs, valley headwalls, and other regions where unsuitable topography has prevented urbanization and agricultural development, or where inaccessibility has limited encroachment by nonnative plant and animal species.

Oahu Ecosystems

The seven Oahu ecosystems that support the species addressed in this rule are described in the following sections.

Coastal

The coastal ecosystem is found on all of the main Hawaiian Islands, with the highest species diversity in the least populated coastal areas of Hawaii, Maui, Molokai, Kahoolawe, Oahu, and Kauai, and their associated islets. On Oahu, the coastal ecosystem includes mixed herblands, shrublands, and grasslands, from sea level to 980 ft (300 m) in elevation, generally within a narrow zone above the influence of waves to within 330 ft (100 m) inland, sometimes extending further inland if strong prevailing onshore winds drive sea spray and sand dunes into the lowland zone (The Nature Conservancy (TNC) 2006a). The coastal vegetation zone is typically dry, with annual rainfall of less than 20 in (50 cm), however windward rainfall may be high enough (up to 40 in (100 cm)) to support mesic-associated and sometimes wet-associated vegetation (Gagne and Cuddihy 1999, pp. 54–66). Biological

diversity is low to moderate in this ecosystem, but may include some specialized plants and animals such as nesting seabirds and the rare native plant *Sesbania tomentosa* (ohai) (TNC 2006a). The plant *Bidens amplexans*, which is listed as endangered in this final rule, is reported from this ecosystem on Oahu (Hawaii Biodiversity and Mapping Program (HBMP) 2008; TNC 2007).

Lowland Dry

The lowland dry ecosystem includes shrublands and forests generally below 3,300 ft (1,000 m) elevation that receive less than 50 in (130 cm) annual rainfall, or are in otherwise prevailing dry substrate conditions. Areas consisting of predominantly native species in the lowland dry ecosystem are now rare; however, this ecosystem is found on the islands of Hawaii, Molokai, Lanai, Kahoolawe, Oahu, and Kauai, and is best represented on the leeward sides of the islands (Gagne and Cuddihy 1999, p. 67). On Oahu, this ecosystem is typically found on the leeward side of the Waianae Mountains, and the leeward southern coast, including Diamond Head Crater (Gagne and Cuddihy 1999, p. 67; TNC 2006b). Biological diversity is low to moderate in this ecosystem, and includes specialized animals and plants such as the Hawaiian owl or pueo (*Asio flammeus sandwichensis*) and *Santalum ellipticum* (iliahialoe) (Wagner *et al.* 1999, pp. 1,220–1,221; TNC 2006b). The plants *Bidens amplexans*, *Doryopteris takeuchii*, and *Pleomele forbesii*, which are listed as endangered in this final rule, are reported from this ecosystem on Oahu (HBMP 2008; TNC 2007).

Lowland Mesic

The lowland mesic ecosystem includes a variety of grasslands, shrublands, and forests, generally below 3,300 ft (1,000 m) elevation, that receive between 50 and 75 in (130 and 190 cm) annual rainfall, or are in otherwise mesic substrate conditions (TNC 2006c). In the Hawaiian Islands, this ecosystem is found on Hawaii, Maui, Molokai, Lanai, and Kauai, on both windward and leeward sides of the islands. On Oahu, this ecosystem is typically found on the leeward slopes of both the Waianae and Koolau Mountains (Gagne and Cuddihy 1999, p. 75; TNC 2006c). Biological diversity is high in this system (TNC 2006c). The plants *Cyanea calycina*, *C. lanceolata*, *Melicope makahae*, *Platydesma cornuta* var. *decurrens*, *Pleomele forbesii*, *Pteralyxia macrocarpa*, and *Tetraplasandra lydgatei*, and the oceanic Hawaiian damselfly, which are listed as

endangered in this final rule, are reported from this ecosystem (HBMP 2008; TNC 2007).

Lowland Wet

The lowland wet ecosystem is generally found below 3,300 ft (1,000 m) elevation on the windward sides of the main Hawaiian Islands, except Kahoolawe and Niihau (Gagne and Cuddihy 1999, p. 85; TNC 2006d). These areas include a variety of wet grasslands, shrublands, and forests that receive greater than 75 in (190 cm) annual precipitation, or are in otherwise wet substrate conditions (TNC 2006d). On Oahu, this system is best developed in wet valleys and slopes along the summit of the Koolau Mountains, with a small area located on the windward side of the summit of the Waianae Mountains (TNC 2006d). Biological diversity is high in this system (TNC 2006d). The plants *Cyanea calycina*, *C. lanceolata*, *C. purpurellifolia*, *Cyrtandra gracilis*, *C. kaulantha*, *C. sessilis*, *C. waiolani*, *Melicope hiiakeae*, *Platydesma cornuta* var. *cornuta*, *Psychotria hexandra* ssp. *oahuensis*, *Pteralyxia macrocarpa*, and *Zanthoxylum oahuense*, and the blackline, crimson, and oceanic Hawaiian damselflies, which are listed as endangered in this final rule, are reported from this ecosystem (HBMP 2008; TNC 2007).

Montane Wet

The montane wet ecosystem is composed of natural communities (grasslands, shrublands, forests, and bogs) found at elevations between 3,300 and 6,600 ft (1,000 and 2,000 m), in areas where annual precipitation is greater than 75 in (190 cm) (TNC 2006e). This system is found on all of the main Hawaiian Islands except Niihau and Kahoolawe (only the islands of Molokai, Maui, and Hawaii have areas above 4,020 ft (1,225 m) (TNC 2006e). On Oahu, this ecosystem is found only at the summit of the Waianae Mountains (TNC 2007). Biological diversity is moderate to high (TNC 2006e). Due to the restricted distribution of this ecosystem on Oahu, only the plants *Cyanea calycina* and *Melicope christophersenii*, which are listed as endangered in this final rule, are reported from this ecosystem (HBMP 2008; TNC 2007).

Dry Cliff

The dry cliff ecosystem is composed of vegetation communities occupying steep slopes (greater than 65 degrees) in areas that receive less than 75 in (190 cm) of rainfall annually, or are in otherwise dry substrate conditions (TNC 2006f). This ecosystem is found on all

Mountains (Polhemus 1994a, p. 7; Polhemus 1994b, pp. 37–38; Englund 1999, pp. 228–229, 231; Polhemus 2007, pp. 234, 238). In 2003, this species was not found during surveys of Kahana Stream and may be extirpated from this stream system (Englund *et al.* 2003, p. 6). Currently, only three occurrences of the crimson Hawaiian damselfly are known, all from the Koolau Mountains in the lowland wet and wet cliff ecosystems at Moanalua, north Halawa, and Maakua (TNC 2007; Polhemus 2008a, in litt.; HBMP 2008; Preston 2011, in litt.). This species was last observed in the lowland wet ecosystem at Waiawa in the late 1990s (Englund 1999, p. 229). All colonies of this damselfly are constrained to portions of streams not occupied by nonnative predatory fish—that is, stream portions above geologic or manmade barriers (e.g., waterfalls, steep gradients, dry stream midreaches, or constructed diversions). No estimates of population size for the crimson Hawaiian damselfly are available.

The blackline Hawaiian damselfly (*Megalagrion nigrohamatum nigrolineatum*) is a moderately-sized and delicate subspecies (Polhemus and Asquith 1996, p. 73). It occurs in the slow sections or pools along mid-reach and headwater sections of perennial upland streams and in seep-fed pools along overflow channels bordering such streams. The adults measure from 1.4 to 1.8 in (35 to 45 mm) in length and have a wingspan of 1.7 to 1.9 in (45 to 50 mm). Naiads remain concealed and are found under stones or in mats of algae (Williams 1936, p. 318; Zimmerman 1948a, pp. 371–372).

The blackline Hawaiian damselfly was known historically from the Koolau and Waianae Mountains, from sea level to over 2,400 ft (730 m) (Williams 1936, p. 318; Polhemus 1994a, pp. 6–12). Currently, this species is found in the lowland wet ecosystem on the windward and leeward sides of the Koolau Mountains, in the headwaters and upper reaches of 17 streams: Koloa, Kaipapau, Maakua, upper Kaluanui, Palaa, Helemanohi headwaters, Poamoho, Kahana, Waiahole, Waiawa, Kaalaea, Waihee, Kahaluu, north Halawa, Heeia, Kalihi, and Maunawili (TNC 2007; Polhemus 2008a, in litt.; Wolff 2008, in litt.; HBMP 2008; Preston 2011, in litt.). Like the crimson Hawaiian damselfly, all colonies of the blackline Hawaiian damselfly are constrained to portions of streams not occupied by nonnative predatory fish—that is, stream portions above geologic or manmade barriers (e.g., waterfalls, steep gradients, dry stream midreaches, or constructed diversions). Currently, the 17 stream

colonies are estimated to total 800 to 1,000 individuals, with approximately 50 individuals per stream (Polhemus 2008c, in litt.).

The oceanic Hawaiian damselfly (*Megalagrion oceanicum*) is a comparatively large and robust species. The adults measure from 1.8 to 1.9 in (47 to 50 mm) in length and have a wingspan of 2.0 to 2.2 in (51 to 55 mm). Both sexes exhibit prominent patterns including black stripes, but males are bright red in color while females are pale green. Immature individuals of this species are also large with long grasping legs and dagger-like gills (Polhemus and Asquith 1996, p. 77). The oceanic Hawaiian damselfly can be distinguished from other Oahu damselfly species by its large size, black stripes, and fast flight along flowing sections of streams.

Individuals of the immature stage of the oceanic Hawaiian damselfly are found in swiftly flowing sections of streams, usually amid rocks and gravel in stream riffles (stream sections with sufficient gradient to create small standing waves) and small cascades on waterfalls (Williams 1936, pp. 321–322; Polhemus and Asquith 1996, p. 106). While capable of swimming, the naiads usually crawl among gravel or submerged vegetation. Older naiads frequently forage out of the actual stream channel and have been observed among wet moss on rocks, and wet rock walls and seeps (Williams 1936, pp. 321–323). Adults are very bold and strong flyers, and when disturbed frequently fly upward into the forest canopy overhanging the stream or waterfall (Williams 1936, p. 323; Polhemus 1994b, p. 48).

Historically, the oceanic Hawaiian damselfly occurred on both the leeward and windward sides of the Koolau and Waianae Mountains, and was known, but is currently extirpated, from approximately 16 general localities, including the Waianae Mountains and all leeward streams of the Koolau Mountains (Englund and Polhemus 1994, p. 8). The species now currently occupies 12 sites above 300 ft (100 m) in elevation on the windward side of the Koolau Mountains at Kahawainui, Waiiale, Koloa, Kaipapau, Maakua, upper Kaluanui, Kawaiiki, Opauala, upper Helemanohi, Makaua, Waihee, and Kahaluu, in the lowland mesic, lowland wet, and wet cliff ecosystems (TNC 2007; Polhemus 2007, pp. 237–239; HBMP 2008; Preston 2011, in litt.). Like the crimson and blackline Hawaiian damselflies, the oceanic Hawaiian damselfly is constrained to portions of streams not occupied by nonnative predatory fish—that is, stream portions

above geologic or manmade barriers (e.g., waterfalls, steep gradients, dry stream midreaches, or constructed diversions). No estimates of population size for the oceanic Hawaiian damselfly are available.

Summary of Comments and Recommendations

On August 2, 2011, we published a proposed rule to list these 23 Oahu species as endangered throughout their ranges, and to designate critical habitat for 124 species (76 FR 46362). The comment period for the proposal opened on August 2, 2011, and closed on October 3, 2011. We requested that all interested parties submit comments or information concerning the proposed listing and designation of critical habitat for the 124 species. We contacted all appropriate State and Federal agencies, county governments, elected officials, scientific organizations, and other interested parties and invited them to comment. In addition, we published a public notice of the proposed rule on August 6, 2011, in the local Honolulu Star Advertiser newspaper, at the beginning of the comment period. On April 12, 2012, we published a document (77 FR 21936) announcing the availability of our draft economic analysis, requesting comments on it until May 14, 2012, and reopening the comment period on the August 2, 2011, proposed rule (76 FR 46362) until that time as well.

During the comment periods, we received a total of 55 comment letters. We did not receive any requests for public hearings. Four commenters were peer reviewers, 5 were State of Hawaii agencies, 1 was a Federal agency (U.S. Navy), and 45 were nongovernmental organizations or individuals. Due to the nature of the proposed rule, we received combined comments from the public on both the listing action and the critical habitat; we have therefore addressed these issues in a single comment section.

Four of the comment letters supported the listing and designation of critical habitat for the Oahu species. Thirty-one commenters requested that we exclude 695 ac (281 ha) (representing entire or portions of five different critical habitat units), based on possible economic effects of the designation. We reviewed all comments we received for substantive issues and new data regarding the proposed listing of 23 species and designation of critical habitat for 124 species. We have fully considered all substantive comments in this final rule. Written comments we received during the comment periods are addressed in the following

summary. For readers' convenience, we have combined similar comments into single comments and responses.

Peer Review

In accordance with our peer review policy published in the *Federal Register* on July 1, 1994 (59 FR 34270), we solicited expert opinions from 13 knowledgeable individuals with scientific expertise on the Oahu plants and damselflies and their habitats, including familiarity with the species, the geographic region in which these species occur, and conservation biology principles. We received responses from four of the peer reviewers who were solicited. These four peer reviewers generally supported our methodology and conclusions. One reviewer supported the listing and critical habitat for the Oahu species, one reviewer supported protection of the stream habitat essential to the Hawaiian damselflies, and all four reviewers provided new information on one or more of the Oahu species, which was incorporated into this final rule. We reviewed all comments received from the peer reviewers for substantive issues and new information regarding the listing of 23 species and designation of critical habitat for 124 species. Peer reviewer comments are addressed in the following summary and incorporated into the final rule as appropriate.

Peer Reviewer Comments

(1) *Comment:* One peer reviewer suggested that we use the more current and accepted terms "ferns and lycophytes" instead of "ferns and allies" in the published rule.

Our Response: We agree that "ferns and lycophytes" is the currently accepted terminology; however, changing the term "ferns and allies" to "ferns and lycophytes" at 50 CFR 17.12 and at 50 CFR 17.99(j) would require a separate rulemaking to amend the Code of Federal Regulations (CFR), not only for the Hawaiian species listings, but for all previously listed species nationwide. This rulemaking would also require an opportunity for public review and comment, which we are unable to accommodate in this final rule.

(2) *Comment:* One peer reviewer disagreed with our statement that "many native Hawaiian plants and animals currently occupy only areas of marginal habitat because the threats are reduced in those areas," and suggested that the areas where the species currently occur constitute their prime habitat, not marginal habitat.

Our Response: Prime habitat and marginal habitat are not terms used in the Act. However, we agree that some

native Hawaiian plants and animals thrive in areas that are "marginal" (i.e., not dominated by other native species) and have modified our statement in this final rule. The areas designated as critical habitat in this final rule include both occupied and unoccupied habitat.

(3) *Comment:* One peer reviewer expressed concern regarding the potential threat to the three proposed Hawaiian damselflies from the use of biopesticides (pesticides derived from natural materials such as animals, plants, bacteria, and minerals) to combat, for example, mosquitoes.

Our Response: We do not have sufficient data to evaluate the effects that biopesticides, in particular, *Bacillus thuringiensis israelensis* (Bti), may have on Hawaiian damselflies. Therefore, Bti is not considered a current threat to the three proposed Hawaiian damselflies because the specific impacts to these damselflies are unknown at this time.

(4) *Comment:* Two peer reviewers provided information from their recent surveys for species of *Megalagrion* and stated that survey results demonstrated that only streams without nonnative fish provide habitat for native damselflies, and that these streams are crucial for the continued survival of *Megalagrion*. The commenters also stated that, in addition to predation by nonnative fish, siltation of stream gravel beds and other stream modifications resulting from erosion of nearby riparian habitat caused by the actions of feral ungulates is a significant threat to *Megalagrion* species. The commenters recommended that the Service should try to protect the remaining stream habitat that is free of nonnative fish, eliminate nonnative fish in the streams in which they occur, and restore streams and surrounding habitat to provide suitable habitat for Hawaii's *Megalagrion* and other native aquatic species. They also stated that the positive impacts from the removal of nonnative fish and ungulates in aquatic and surrounding habitat will improve overall environmental conditions, that native Hawaiian damselfly larvae may effectively control mosquitoes in place of nonnative fish, and that removal of ungulates in stream areas may reduce the incidence of leptospirosis in Hawaii, which has the largest number of reported cases of this human-health hazard in the United States.

Our Response: We agree that habitat degradation and destruction by feral ungulates and predation of *Megalagrion* spp. by nonnative fish are significant threats to the three species of damselflies in this rule (see Factor A and Factor C, below). Listing these species as endangered and designating their critical habitat will provide

conservation benefits including: Protection from being jeopardized by Federal activities; protections against the adverse modification of critical habitat; restrictions on take and trafficking; a requirement that the Service develop and implement recovery plans; authorization to seek land purchases or exchanges for important habitat; and Federal aid to State conservation departments and cooperative endangered species agreements. Listing also lends greater recognition to a species' precarious status, encouraging conservation effort by other agencies, independent organizations, and concerned individuals.

The Service has identified high-quality stream habitat in the State of Hawaii and participates in several programs that provide for stream habitat restoration. One of these programs is the Hawaii Fish Habitat Partnership, whose members developed a strategic plan for implementation of stream restoration projects. Also, funding for implementation of stream restoration activities is available through the National Fish Habitat Action Plan (which includes Federal, State, and private partners), and through the National Fish Passage Program (Service), which will allow for migration of native fish and invertebrates (while excluding nonnative fish) into essential headwater stream reaches. Currently, there are two stream restoration projects funded by these programs on the windward side of Oahu. In 2009, funding was provided to restore native habitat in Waihee Stream and provide a barrier to prevent nonnative fish passage into the upper reaches of the stream where the blackline Hawaiian damselfly occurs. In 2010 and 2011, funds were provided to initiate restoration of habitat for native fish and the blackline Hawaiian damselfly at the lower elevations of Heeia Stream. Additional funding will be pursued to restore the habitat further upstream and to construct a barrier to prevent nonnative fish passage into the upper elevation watershed.

Comments From the State of Hawaii

(5) *Comment:* The Department of Business, Economic Development & Tourism (DBEDT), Office of Planning commented that the proposed rule for the Oahu species is subject to Hawaii Coastal Zone Management (CZM) Program Federal consistency review, pursuant to section 307(c) of the Coastal Zone Management Act (16 U.S.C. 1451 *et seq.*) and 15 CFR part 930, subpart C. In their letter, DBEDT stated that Federal consistency review is required

channels, and catastrophic flooding (Polhemus 1993, 88 pp.). Because many Hawaiian plant and animal species, including the 23 species in this final rule, persist in low numbers and in restricted ranges, natural disasters, such as hurricanes, can be particularly devastating (Mitchell *et al.* 2005, p. 4–3).

Hurricanes affecting Hawaii were only rarely reported from ships in the area from the 1800s until 1949. Between 1950 and 1997, 22 hurricanes passed near or over the Hawaiian Islands, 5 of which caused serious damage (Businger 1998, pp. 1–2). In November 1982, Hurricane Iwa struck the Hawaiian Islands, with wind gusts exceeding 100 miles per hour (mph) (161 kilometers per hour (kph)), causing extensive damage, especially on the islands of Niihau, Kauai, and Oahu (Businger 1998, pp. 2, 6). Many native forest trees were destroyed (Perlman 1992, in litt., pp. 1–9), which opened the canopy and facilitated the invasion of nonnative plants (Kitayama and Mueller-Dombois 1995, p. 671). Historically (prior to the introduction of nonnative, invasive plants to the Hawaiian Islands), it is likely that areas affected by hurricanes would eventually have been repopulated by native plants. However, competition with nonnative plants is exacerbated by hurricanes, and represents a threat to each of the 7 ecosystems and the 20 plant species addressed in this final rule, as described in “Specific Nonnative Plant Species Impacts,” in our August 2, 2011, proposed rule (76 FR 46362). In September 1992, Hurricane Iniki, a Category 4 hurricane with maximum sustained wind speeds recorded at 140 mph (225 kph), passed directly over the island of Kauai and close to the island of Oahu, causing significant damage to areas along Oahu’s southwestern coast (from Barber’s Point or Kalaeloa, to Kaena Point) (Blake *et al.* 2007, p. 20), where the endangered plant *Bidens amplexans* occurs. Biologists have documented hurricane damage (e.g., denuded foliage, toppled and uprooted trees and shrubs, landslides) to the habitat of six other plant species (*Cyrtandra kaulanthera*, *C. sessilis*, *Melicope christophersenii*, *M. hiiakae*, *Platydesma cornuta* var. *cornuta*, and *Psychotria hexandra* ssp. *oahuensis*). Polhemus (1993, pp. 86–87) documented the extirpation of the scarlet Kauai damselfly (*Megalagrion vagabundum*), a species related to the blackline, crimson, and oceanic Hawaiian damselflies included in this final rule, from the entire Hanakapiai Stream system on the island of Kauai as

a result of the impacts of Hurricane Iniki in 1992. Damage by future hurricanes could further decrease the remaining native-plant-dominated habitat areas that support rare plants and animals in Oahu ecosystems (Bellingham *et al.* 2005, p. 681).

Habitat Destruction and Modification Due to Landslides, Rockfalls, Flooding, and Drought

Landslides, rockfalls, and flooding destabilize substrates, damage and destroy individual plants, and alter hydrological patterns, which result in changes to native plant and animal communities. In the open sea near Hawaii, rainfall averages 25 to 30 in (63 to 76 cm) per year, yet the islands may receive up to 15 times this amount in some places, caused by orographic features (Wagner *et al.* 1999; adapted from Price (1983) and Carlquist (1980), pp. 38–39). During storms, rain may fall at 3 in (7.6 cm) per hour or more, and sometimes may reach nearly 40 in (100 cm) in 24 hours, causing destructive flash-flooding in streams and narrow gulches (Wagner *et al.* 1999; adapted from Price (1983) and Carlquist (1980), pp. 38–39). Due to the steep topography of much of the area on Oahu where the species remain, erosion and disturbance caused by introduced ungulates exacerbate the potential for landslides, rockfalls, or flooding, which in turn threaten native plants and some of the damselfly species (see Table 2). For those species that occur in small numbers in highly restricted geographic areas, such events have the potential to eradicate all individuals of a population, or even all populations of a species, resulting in extinction.

Landslides and rockfalls likely adversely impact nine of the species addressed in this final rule, including *Cyanea lanceolata*, *Cyrtandra kaulanthera*, *C. sessilis*, *Doryopteris takeuchii*, *Melicope makahae*, *Platydesma cornuta* var. *decurrens*, *Psychotria hexandra* ssp. *oahuensis*, and the crimson and oceanic Hawaiian damselflies, as documented in observations by field botanists and surveyors (HBMP 2008). Monitoring data from the PEP program and the Hawaii Biodiversity and Mapping Program (HBMP) suggest that these nine species face threats from landslides or falling rocks, as they are found in landscape settings susceptible to these events (e.g., steep slopes and cliffs). Since *C. kaulanthera* is known from only a few individuals in steep-walled stream valleys, one landslide could lead to near extirpation of the species by direct destruction of the individual plants, mechanical damage to individual plants

that could lead to their death, destabilization of the cliff habitat leading to additional landslides, and alteration of hydrological patterns (e.g., affecting the availability of soil moisture). Landslides can modify and destroy riparian and stream habitat by direct physical damage (e.g., rocks and debris falling in a stream, mechanical damage to riparian vegetation), and create disturbed areas leading to invasion by nonnative plants that outcompete the native plants, as well as damage or destroy plants used by the crimson and oceanic damselflies for perching. Field survey data presented by Bakutis (2006c, in litt.) and the PEP Program (2006, p. 51) suggest that flooding is a likely threat to two plant species included in this final listing, one population of *Psychotria hexandra* ssp. *oahuensis*, located in a narrow gulch, and one population of *Cyrtandra sessilis*, growing near a stream in a narrow valley. Intermittent flooding events likely occurred in the stream habitats of the blackline, crimson, and oceanic Hawaiian damselflies in the past, due to stochastic events such as storms and hurricanes. However, the current low numbers of individuals and populations, combined with their breeding, life-history requirements in stream habitats, and reduced ranges, of these three Hawaiian damselflies increase their vulnerability to the threat of flooding. The impact of flooding events may be increased by channelization of stream reaches, or degradation of riparian vegetation by feral ungulates. Naiads may be washed out of streams into the surrounding terrestrial habitat or washed downstream into portions of streams that are occupied by nonnative predatory fish. Adults perching on surrounding vegetation may be washed into flooded streams and drown.

The blackline, crimson, and oceanic Hawaiian damselflies may also be affected by temporary habitat loss associated with droughts, which are not uncommon in the Hawaiian Islands. Between 1860 and 2002, the island of Oahu was affected by 49 periods of drought (Giambelluca *et al.* 1991, pp. 3–4; Hawaii Commission on Water Resource Management 2009a and 2009b). These drought events often desiccate streams, irrigation ditches, and reservoirs; deplete groundwater supplies; and lead to forest and brush fires (Hawaii Commission on Water Resource Management 2009a and 2009b). Desiccation of streams, ditches, and reservoirs directly removes damselfly hunting and breeding habitat. Drought leads to an increase in the

number of forest and brush fires (Giambelluca *et al.* 1991, p. v), causing a reduction of native plant cover and habitat (D'Antonio and Vitousek 1992, pp. 77–79), and of plants used by the three Hawaiian damselflies for perching and hunting for prey.

Habitat Destruction and Modification by Agriculture and Urban Development

Although we are unaware of any comprehensive, site-by-site assessment of wetland loss in Hawaii, Erikson and Puttock (2006, p. 40) and Dahl (1990, p. 7) estimated that at least 12 percent of lowland to upper-elevation wetlands in Hawaii had been converted to non-wetland habitat by the 1980s. If only coastal plain (below 1,000 ft (300 m)) marshlands and wetlands are considered, it is estimated that 30 percent have been converted to agricultural and urban development (Kosaka 1990, in litt.). Historical records show these marshlands and wetlands provided habitat for many damselfly species, including the blackline, oceanic, and crimson Hawaiian damselflies (Polhemus 2007, pp. 233, 237–239; HBMP 2008).

Although filling of wetlands is regulated by permitting today, the loss of riparian or wetland habitats utilized by the blackline and crimson Hawaiian damselflies may still occur due to Oahu's population growth and development, with concurrent demands on limited developable land and water resources (Lester 2007, in litt.). The State's Commission on Water Resource Management recognized the need for a water resource protection plan, which is currently under development (Commission on Water Resource Management 2010). In addition, marshes have been slowly filled and converted to meadow habitat, as a result of sedimentation from increased storm water runoff from upslope development, the accumulation of uncontrolled growth of invasive vegetation, and blockage of downslope drainage (Wilson Okamoto & Associates, Inc. 1993, pp. 3–4, 3–5).

The threats posed by conversion of wetland and other aquatic habitat for agriculture and urban development are ongoing and are expected to continue into the future. Hawaii's population has increased almost 8 percent in the past 11 years, along with the associated increased demands on limited land and water resources (Hawaii Department of Business, Economic Development and Tourism (HDBEDT) 2012). These modified areas lack the aquatic habitat features that the blackline and crimson Hawaiian damselflies require for essential life-history needs, such as

marshes, sidepools along streams, and slow sections of perennial streams, and no longer support populations of these two species. Agriculture and urban development have thus contributed to the present curtailment of the habitat of these two Hawaiian damselflies, and we have no indication that this threat is likely to be significantly ameliorated in the near future.

Habitat Destruction and Modification by Stream Diversion

Stream modifications began with the early Hawaiians who diverted water to irrigate taro (kalo, *Colocasia esculenta*). A taro planter's share of water was determined by the amount of labor contributed to the construction and maintenance of the ditch, and was not proportional to their acreage of flooded terraces. Water rights of others taking water from the main stream below the dam had to be respected, and no ditch was permitted to divert more than half the flow from a stream. Water was withdrawn according to a time schedule, from a few hours at a time day or night, up to 2 or 3 days, and in times of drought, the "water boss" had the right to adjust the sharing of available water to meet exigencies (Handy and Handy 1972, pp. 58–59).

The advent of plantation sugarcane cultivation led to far more extensive stream diversions, with the first diversion built in 1856 on Kauai (Wilcox 1996, p. 54). The first diversion on Oahu, Oahu Ditch, was built in 1902 (Wilcox 1996, p. 65). These systems were designed to tap water at upper elevations (above 1,000 ft (300 m)) by means of a concrete weir in the stream (Wilcox 1996, p. 54). All, or most, of the low or average flow of the stream was, and often still is, diverted into fields or reservoirs, leaving many stream channels completely dry (Takasaki *et al.* 1969, pp. 27–28; Harris *et al.* 1993, p. 12; Wilcox 1996, p. 56).

By the 1930s, water diversions had been developed on all of the main Hawaiian Islands, and by 1978, the stream flow in more than half the 366 perennial streams in Hawaii had been altered in some manner (Brasher 2003, p. 1,055). Some stream diversion systems are extensive, such as the Waiahole Ditch on Oahu, built in the early 1900s, which diverts water from 37 streams within the ranges of the blackline, crimson, and oceanic damselflies, on the windward side of Oahu to the dry plains on the leeward side of the island via a tunnel cut through the Koolau range (Stearns and Vaksvik 1935, pp. 399–403; Tvedt and Oestigaard 2006, pp. 43–44). Historically, damselflies in the genus

Megalagrion were a common component of Hawaiian streams and wetlands at elevations ranging from sea level to the summit of the Koolau range on Oahu. This loss of stream habitat may have contributed to the extirpation of populations of the three damselflies from lower elevations (Polhemus 2007, pp. 233–234, 238–239).

Habitat Destruction and Modification by Dewatering of Aquifers

In addition to the diversion of stream water and the resultant downstream dewatering, many streams on Oahu have experienced reduced or zero surface flow as a result of the dewatering of their source aquifers. Often these aquifers, which previously fed the streams, were tapped by tunneling or through the injudicious placement of wells (Gingerich and Oki 2000, p. 6; Stearns 1985, pp. 291–305). These groundwater sources were diverted for both domestic and agricultural use, and in some areas have completely depleted nearby stream and spring flows. For example, both the bore tunnels and the contour tunnel of the Waiahole Ditch system intersect perched aquifers (aquifers above the primary ground water table), which subsequently are drained to the elevation of the tunnels (Stearns and Vaksvik 1935, pp. 399–406). This has reduced stream habitat available to the blackline, crimson, and oceanic damselflies. Likewise, the boring of the Haiku tunnel on Oahu in 1940 caused a 25 percent reduction in the base flow of Kahaluu Stream, which is more than 2.5 mi (4 km) away (Takasaki *et al.* 1969, pp. 31–32), and has impacted available habitat for the blackline and oceanic Hawaiian damselflies (HBMP 2008). Many of these aquifers were also the sources of springs that contributed flow to Oahu's windward streams; draining of these aquifers caused many of the springs to dry up, including some more than 0.3 mi (0.5 km) away from the bore tunnels (Stearns and Vaksvik 1935, pp. 379–380).

Habitat Destruction and Modification by Vertical Wells

Surface flow of streams has also been affected by vertical wells drilled in pre-modern times, because the basal aquifer (lowest groundwater layer) and alluvial caprock (sediment-deposited harder rock layer) through which the lower sections of streams flow can be penetrated and hydraulically connected by wells (Gingerich and Oki 2000, p. 6; Stearns 1940, p. 88). This allows water in aquifers normally feeding the stream to be diverted elsewhere underground. Dewatering of the streams by tunneling

and well placement near or in streams was a significant cause of habitat loss, and these effects continue today. Historically, for example, there was sufficient surface flow in Makaha and Nanakuli Streams on Oahu to support taro loi (artificial ponds for taro cultivation) in their lower reaches, but this flow disappeared subsequent to construction of vertical wells upstream (Devick 1995, pers. comm.). The inadvertent dewatering of streams through the penetration of their aquifers (which are normally separated from adjacent waterbearing layers by an impermeable layer), by tunneling or through placement of vertical wells, caused the loss of habitat of blackline, crimson, and oceanic Hawaiian damselflies habitat, as these species were historically known from these areas.

Habitat Destruction and Modification by Stream Channelization

Stream degradation has been particularly severe on the island of Oahu where, by 1978, 58 percent of the perennial streams and banks had been channelized (e.g., concrete lined, partially lined, or altered) to control flooding (Polhemus and Asquith 1996, p. 24; Brasher 2003, p. 1,055). These alterations have resulted in an overall 89 percent loss of the total stream length island-wide (Polhemus and Asquith 1996, p. 24; Parrish *et al.* 1984, p. 83). The channelization of streams creates artificial, wide-bottomed stream beds, and often results in removal of riparian vegetation, which reduces shading, increases substrate homogeneity, increases temporal water velocity (increased water flow speed during times of higher precipitation including minor and major flooding), and causes higher water temperatures (Parrish *et al.* 1984, p. 83; Brasher 2003, p. 1,052). Tests conducted on native aquatic species showed that the higher water temperatures in channelized streams caused stress, and sometimes death (Parrish *et al.* 1984, p. 83). Natural streams meander and are lined with rocks, trees, and natural debris, and during times of flooding, jump their banks. Channelized streams are straightened and often lack natural obstructions, and during times of higher precipitation or flooding, facilitate a higher water flow velocity. Hawaiian damselflies are largely absent from channelized portions of streams (Polhemus and Asquith 1996, p. 24), which has likely contributed to a reduction in the historical range of Hawaiian damselfly species. In contrast, undisturbed Hawaiian stream systems exhibit a greater amount of riffle and

pool habitat canopy closure, higher consistent flow velocity, and lower water temperatures that are characteristic of streams to which the Hawaiian damselflies, in general, are adapted (Brasher 2003, pp. 1,054–1,057).

Channelization of streams has not been restricted to lower stream reaches. For example, there is extensive channelization of Oahu's Kalihi Stream above 1,000 ft (300 m) elevation.

Extensive stream channelization on Oahu has also contributed to the loss of habitat for the blackline, crimson, and oceanic Hawaiian damselflies (Englund 1999, p. 236; Polhemus 2008, in litt.).

Stream diversion, channelization, dewatering, and vertical wells represent serious and ongoing threats to the blackline, crimson, and oceanic Hawaiian damselflies for the following reasons: (1) They reduce the amount and distribution of stream habitat available to these species; (2) they reduce stream flow, leaving lower elevation stream segments completely dry except during storms, or leaving many streams completely dry year round, thus reducing or eliminating stream habitat; and (3) they indirectly lead to an increase in water temperature that results in physiological stress and to the loss of blackline, crimson, and oceanic Hawaiian damselfly naiads. The blackline, crimson, and oceanic Hawaiian damselflies are particularly vulnerable to extinction due to such changes (i.e., stream diversion, channelization, and dewatering), a vulnerability which is exacerbated by their range and habitat constrictions and declines in their population numbers.

Habitat Destruction and Modification by Climate Change

Climate change will be a particular challenge for biodiversity because the introduction and interaction of additional stressors may push species beyond their ability to survive (Lovejoy *et al.* 2005, pp. 325–326). The synergistic implications of climate change and habitat fragmentation are the most threatening facet of climate change for biodiversity (Lovejoy *et al.* 2005, p. 4). The magnitude and intensity of the impacts of global climate change and increasing temperatures on native Hawaiian ecosystems are unknown. We are not aware of climate change studies specifically related to the seven Oahu ecosystems described in this final rule, or the 23 species that are associated with those ecosystems. Based on the best available information, climate change impacts could lead to the decline or loss of native species that comprise the communities in which the

23 species occur (Pounds *et al.* 1999, pp. 611–612; Still *et al.* 1999, p. 610; Benning *et al.* 2002, pp. 14,246 and 14,248). In addition, weather regime changes (e.g., droughts, floods) will likely result from increased annual average temperatures related to more frequent El Niño episodes in Hawaii. These changes may decrease water availability and increase the consumptive demand on Oahu's natural streams and reservoirs by Oahu's residents (Giambelluca *et al.* 1991, p. v). The effects of increasing temperatures on the aquatic habitat of the three damselfly species are not specifically known, but likely include the loss of aquatic habitat from reduced stream flow, evaporation of standing water, and increased water temperature (Pounds *et al.* 1999, pp. 611–612; Still *et al.* 1999, p. 610; Benning *et al.* 2002, pp. 14,246 and 14,248).

Oki (2004, p. 4) has noted long-term evidence of decreased precipitation and stream flow on the Hawaiian Islands, based upon evidence collected by stream gauging stations. This long-term drying trend, coupled with existing ditch diversions and periodic El Niño-caused drying events, has created a pattern of severe and persistent stream dewatering events (Polhemus 2008, in litt.). Future changes in precipitation and the forecast of those changes are highly uncertain because they depend, in part, on how the El Niño-La Niña weather cycle (a disruption of the ocean atmospheric system in the tropical Pacific having important global consequences for weather and climate) might change (Hawaii Climate Change Action Plan 1998, pp. 2–10).

The 23 species in this final rule may be especially vulnerable to extinction due to anticipated environmental changes that may result from global climate change. Environmental changes that may affect these species are expected to include habitat loss or alteration and changes in disturbance regimes (e.g., storms and hurricanes), in addition to direct physiological stress caused by increased streamwater temperatures to which the native Hawaiian damselfly fauna are not adapted. The probability of a species going extinct as a result of these factors increases when its range is restricted, habitat decreases, and population numbers decline (Intergovernmental Panel on Climate Change 2007, p. 8). The 23 species have limited environmental tolerances, limited ranges, restricted habitat requirements, small population sizes, and low numbers of individuals. Therefore, we would expect these species to be particularly vulnerable to projected

environmental impacts that may result from changes in climate, and subsequent impacts to their habitats (e.g., Pounds *et al.* 1999, pp. 611–612; Still *et al.* 1999, p. 610; Benning *et al.* 2002, pp. 14,246 and 14,248). We believe changes in environmental conditions that may result from climate change may impact these 23 species and their habitat, and we do not anticipate a reduction in this potential threat in the near future.

Summary of Habitat Destruction and Modification

The threats to the habitats of each of the 23 Oahu species addressed in this final rule are occurring throughout the entire range of each of the species. These threats include introduced ungulates, nonnative plants, fire, natural disasters, and climate change. In addition, the habitats of the blackline, crimson, and oceanic Hawaiian damselflies also face threats from agricultural and urban development, stream diversion, stream channelization, and stream dewatering.

The effects from ungulates are ongoing, because ungulates currently occur in six of the seven ecosystems on which these species depend. The threat posed by introduced ungulates to the species and their habitats in this final rule that occur in these six ecosystems (see Table 2) is serious, because they cause: (1) Trampling and grazing that directly impact the plant communities, which include the 19 of the 20 plant species listed in this final rule, and impact plants in riparian areas used by the blackline, crimson, and oceanic damselflies for perching, reproduction, and hunting for prey; (2) increased soil disturbance, leading to mechanical damage to individuals of the plant species listed in this final rule, and plants in riparian areas used by the damselflies for perching, reproduction, and hunting for prey; (3) creation of open, disturbed areas conducive to weedy plant invasion and establishment of alien plants from dispersed fruits and seeds, which results over time in the conversion of a community dominated by native vegetation to one dominated by nonnative vegetation (leading to all of the negative impacts associated with nonnative plants, listed below); and (4) increased watershed erosion and sedimentation, which affects aquatic habitats used by the three Hawaiian damselflies. Although plants used for perching by damselflies are not necessarily native plants, ungulate activity damages or removes all plants near the stream. Damselflies depend on plants near the stream for their daily activities, territory establishment,

reproduction, and hunting prey. These threats are expected to continue or increase without ungulate control or eradication.

Nonnative plants represent a serious and ongoing threat to the habitats of all 20 plant species being addressed in this final rule through habitat destruction and modification because they: (1) Adversely impact microhabitat by modifying the availability of light; (2) alter soil-water regimes; (3) modify nutrient cycling processes; (4) alter fire characteristics of native plant habitat, leading to incursions of fire-tolerant nonnative plant species into native habitat; and (5) outcompete, and possibly directly inhibit the growth of, native plant species. Each of these threats can convert native-dominated plant communities to nonnative plant communities (Cuddihy and Stone 1990, p. 74; Vitousek 1992, pp. 33–35). This conversion has negative impacts on, and is a threat to, the 20 plant species addressed here.

The threat from fire to the habitats of six species in this final rule (*Bidens amplexans*, *Cyanea calycina*, *Doryopteris takeuchii*, *Korthalsella degeneri*, *Pleomele forbesii*, and *Pteralyxia macrocarpa*; see Table 2) is a serious and ongoing threat, because fire damages and destroys native vegetation, including dormant seeds, seedlings, and juvenile and adult plants. Many nonnative, invasive plants, particularly fire-tolerant grasses, can outcompete native plants and inhibit their regeneration (D'Antonio and Vitousek 1992, pp. 70, 73–74; Tunison *et al.* 2002, p. 122). Successive fires that burn farther and farther into native habitat destroy native plants and remove habitat for native species by altering microclimatic conditions and creating conditions favorable to alien plants. The threat from fire is unpredictable but omnipresent in ecosystems that have been invaded by nonnative, fire-prone grasses.

Natural disasters, such as hurricanes, represent a serious threat to the habitats of 7 of the 20 plant species addressed in this final rule (*Bidens amplexans*, *Cyrtandra kaulantha*, *C. sessilis*, *Melicope christophersenii*, *M. hiakae*, *Platydesma cornuta* var. *cornuta*, and *Psychotria hexandra* ssp. *oahuensis*), because they open the forest canopy, modify available light, and create disturbed areas that are conducive to invasion by nonnative pest plants (Asner and Goldstein 1997, p. 148; Harrington *et al.* 1997, pp. 346–347). The discussion under "Habitat Destruction and Modification by Nonnative Plants" above provides additional information related to canopy

gaps, light availability, and the establishment of nonnative plant species. In addition, hurricanes are a threat to the habitats of the three Hawaiian damselfly species in this final rule, because they alter and cause direct damage to streams (Polhemus 1993, pp. 86–87). These habitat impacts can be particularly devastating to the seven plant species and three Hawaiian damselfly species addressed in this final rule, because, due to other threats, they now persist in low numbers or occur in restricted ranges, and are therefore less resilient to such disturbances. Furthermore, a particularly destructive hurricane holds the potential to drive a localized endemic species to extinction in a single event. Hurricanes pose an ongoing and ever-present threat, because they can occur at any time, although their occurrence is not predictable.

Landslides, rockfalls, and flooding adversely impact the habitats of 10 of the species in this final rule (*Cyanea lanceolata*, *Cyrtandra kaulantha*, *C. sessilis*, *Doryopteris takeuchii*, *Melicope makahae*, *Platydesma cornuta* var. *decurrens*, *Psychotria hexandra* ssp. *oahuensis*, and the blackline, crimson and oceanic Hawaiian damselflies) (see Table 2) by destabilizing substrates, damaging and destroying individual plants and damselflies, and altering hydrological patterns. These threats result in habitat destruction or modification, and changes to native plant and animal communities. Drought is a threat to all three damselfly species' habitats by desiccation of streams, ditches, and reservoirs, which eliminates damselfly hunting and breeding habitat. These threats are significant and have the potential to occur at any time, although their incidence is not predictable.

The threats caused by conversion of wetland and other aquatic habitat to agriculture and urban development are ongoing, expected to continue into the future, and affect each of the three damselfly's habitats. Twelve percent of the freshwater habitat in Hawaii has already been lost, and 30 percent of all coastal plain wetlands in Hawaii has been lost to agriculture and urban development (Kosaka 1990, in litt.). These modified areas no longer support populations of these Hawaiian damselflies. These threats are expected to continue in the future.

Stream diversion, channelization, and dewatering represent serious and ongoing threats to the blackline, crimson, and oceanic Hawaiian damselflies because they: (1) Reduce the amount and distribution of stream habitat; (2) reduce stream flow, which

leaves lower elevation stream segments either completely dry year round, or completely dry except during storms, which reduces or eliminates stream habitat; and (3) indirectly lead to an increase in water temperature by altering the normal hydrograph patterns, which leads to the loss of damselfly naiads, due to direct physiological stress. The probability of species extinction increases when ranges are restricted, the quality and quantity of habitat decreases, and population numbers decline. Accordingly, the blackline, crimson, and oceanic Hawaiian damselflies are vulnerable to extinction due to such changes in their stream habitat.

The projected effects of global climate change and increasing temperatures on the habitats of the 23 species addressed in this final rule are related to changes in microclimatic conditions in their habitats. These changes may lead to the loss of native species due to direct physiological stress, the loss or alteration of habitat, increased competition from nonnative species, and changes in disturbance regimes (e.g., fire, storms, and hurricanes). Because the specific and cumulative effects of climate change on these 23 species are presently unknown, we are not able to determine the magnitude of this possible threat with confidence.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

We are not aware of any threats to the 23 species addressed in this final rule that are attributable to overutilization for commercial, recreational, scientific, or educational purposes.

C. Disease or Predation

Disease

We are not aware of any threats to the 23 species addressed in this final rule that are attributable to disease.

Predation

Hawaii's plants and animals evolved in nearly complete isolation from continental influences. Successful colonization of these remote volcanic islands was infrequent, and many organisms never established populations. For example, Hawaii lacks any native ants or conifers, has very few bird families, and has only a single native land mammal (Loope 1998, p. 748). Defenses against mammalian herbivory, such as thorns, prickles, and production of toxins, were not needed, and the evolutionary pressure for plants to produce or maintain them was lacking. Therefore, Hawaiian plants

either lost or never developed these defenses (Carlquist 1980, p. 173). The native flora and fauna of the islands are thus particularly vulnerable to the impacts of introduced nonnative species, as discussed below.

Introduced Ungulates

In addition to the habitat impacts discussed above, ungulates pose a threat to the following 19 of the 20 plant species in this final rule by trampling and eating individual plants (this information is also presented in Table 2): *Bidens amplexans* (feral pigs and goats), *Cyanea calycina* (feral pigs and goats), *C. lanceolata* (feral pigs), *C. purpurellifolia* (feral pigs), *Cyrtandra gracilis* (feral pigs), *C. kaulantha* (feral pigs), *C. sessilis* (feral pigs), *C. waiolani* (feral pigs), *Korthalsella degeneri* (feral pigs and goats), *Melicope christophersenii* (feral pigs), *M. hilakae* (feral pigs), *M. makahae* (feral pigs and goats), *Platydesma cornuta* var. *cornuta* (feral pigs), *P. cornuta* var. *decurrens* (feral pigs and goats), *Pleomele forbesii* (feral pigs and goats), *Psychotria hexandra* ssp. *oahuensis* (feral pigs), *Pteralyxia macrocarpa* (feral pigs and goats), *Tetraplasandra lydgatei* (feral pigs), and *Zanthoxylum oahuense* (feral pigs). Predation by feral pigs and goats is also a threat to the host plants (*Nestegis sandwicensis* and *Sapindus oahuensis*) of *Korthalsella degeneri*. The fern *Doryopteris takeuchii* grows on the slopes of Diamond Head Crater, an area that is not affected by introduced ungulates.

We have direct evidence of ungulate damage to some of these species, but for many, ungulate damage is presumed based on several studies conducted in Hawaii and elsewhere. In a study conducted by Diong (1982, p. 160) on Maui, feral pigs were observed browsing on young shoots, leaves, and fronds of a wide variety of plants, of which over 75 percent were endemic species (Diong 1982, p. 160). A stomach content analysis in this study showed that 60 percent of the pigs' food source consisted of the endemic *Cibotium* (hapuu, tree fern). Pigs were observed to fell plants and remove the bark of the native plant species *Clermontia*, *Cibotium*, *Coprosma*, *Psychotria*, *Scaevola*, and *Hedyotis*, resulting in larger trees being killed over a few months of repeated feeding (Diong 1982, p. 144). A study in Texas conducted by Beach (1997, pp. 3–4) revealed that feral pigs spread disease and parasites, and that their rooting and wallowing behavior led to spoilage of watering holes and loss of soil through leaching and erosion. Rooting activities also decreased the survivability of some

plant species through disruption at root level of mature plants and seedlings (Beach 1997, pp. 3–4).

Feral goats thrive on a variety of food plants, and are instrumental in the decline of native vegetation in many areas (Cuddihy and Stone 1990, p. 64). Feral goats trample roots and seedlings, cause erosion, and promote the invasion of alien plants. They are able to forage in extremely rugged terrain and have a high reproductive capacity (Clarke and Cuddihy 1980, p. C–20; van Riper and van Riper 1982, pp. 34–35; Tomich 1986, pp. 153–156; Cuddihy and Stone 1990, p. 64). A study of goat predation on a native *Acacia koa* forest on the island of Hawaii has shown that grazing pressure by goats can cause the eventual extinction of *Acacia koa* because it is unable to reproduce (Spatz and Mueller-Dombois 1973, p. 876). If goats are maintained at constantly high numbers, mature trees will eventually die, including the root systems that support suckers and vegetative reproduction (Spatz and Mueller-Dombois 1973, p. 876). Another study at Puuwaawaa on the island of Hawaii demonstrated that prior to management actions in 1985, regeneration of endemic shrubs and trees in goat-grazed areas was almost totally lacking, contributing to the invasion of the forest understory by exotic grasses and weeds. After the removal of grazing animals in 1985, *A. koa* and *Metrosideros* spp. seedlings were observed germinating by the thousands (HDLNR 2002, p. 52). Based on a comparison of fenced and unfenced areas, it is clear that goats can devastate native ecosystems (Loope *et al.* 1988, p. 277). Because goats occur in 6 of the 7 described ecosystems on Oahu, the results of the studies described above suggest that goats can also alter these ecosystems and directly damage or destroy native plants.

Rats

There are three species of introduced rats on the Hawaiian Islands. The Polynesian rat (*Rattus exulans*) and the black rat (*Rattus rattus*) are primarily found in the wild, in dry to wet habitats, while the Norway rat (*Rattus norvegicus*) is typically found in manmade habitats such as urban areas or agricultural fields (Tomich 1986, p. 41). Studies of Polynesian rat DNA suggest that they first appeared in the Hawaiian Islands along with emigrants from the Marquesas about 400 A.D., with a second cultural interaction around 1100 A.D. (Ziegler 2002, p. 315). The black rat and the Norway rat most likely arrived in the Hawaiian Islands more recently, as stowaways on ships,

sometime in the 19th century (Atkinson and Atkinson 2000, p. 25).

Rats occur in all 7 of the Oahu ecosystems, and rat predation is a threat to 5 of the 20 plant species addressed in this final rule (*Cyanea calycina*, *C. lanceolata*, *Cyrtandra gracilis*, *Melicope hiiakae*, and *Psychotria hexandra* ssp. *oahuensis*; see Table 2), which have fleshy fruits. Rats impact native plants by eating fleshy fruits, seeds, flowers, stems, leaves, roots, and other plant parts (Atkinson and Atkinson 2000, p. 23), and can seriously affect regeneration. They are known to have caused declines or even the total elimination of island plant species (Campbell and Atkinson 1999, as cited in Atkinson and Atkinson 2000, p. 24). On the Hawaiian Islands, rats may consume as much as 90 percent of the seeds produced by some trees, or, in some cases, prevent the regeneration of forest species completely (Cuddihy and Stone 1990, pp. 68–69). Plants with fleshy fruits are particularly susceptible to rat predation, including several of the plant genera in this final rule, for example, the fruits of plants in the bellflower (e.g., *Cyanea* spp.) and African violet (e.g., *Cyrtandra* spp.) families (Cuddihy and Stone 1990, pp. 67–69). Research on rats in forests in New Zealand has demonstrated that, over time, rats may alter the species composition of forested areas (Cuddihy and Stone 1990, pp. 68–69).

Nonnative Fish

Predation by nonnative fish is a serious and ongoing threat to the blackline, crimson, and oceanic Hawaiian damselflies. Crimson and blackline Hawaiian damselfly naiads occur in standing or seep-fed pools and slow-flowing sections of streams, and oceanic Hawaiian damselfly naiads occur under stones or mats of moss and algae in streams, where they are each vulnerable to predation by nonnative fish. Information suggests that Hawaiian damselflies experience limited natural predation pressure from the five species of freshwater fish native to Hawaii—gobies (Gobiidae) and sleepers (Eleotridae) (Ego 1956, p. 24; Kido *et al.* 1993, pp. 43–44; Englund 1999, pp. 236–237). Hawaii's native fishes are benthic (bottom) feeders, and stream-dwelling Hawaiian damselfly species, including the blackline, crimson, and oceanic Hawaiian damselflies, avoid these areas in preference for shallow side channels, sidepools, and higher velocity riffles and seeps (Englund 1999, pp. 236–237). While fish predation has been an important factor in the evolution of behavior in damselfly naiads in continental systems (Johnson

1991, p. 8), it can only be speculated that Hawaii's stream-dwelling damselflies adapted behaviors to avoid the benthic feeding habits of native fish species.

Over 70 species of nonnative fish have been introduced into Hawaiian freshwater habitats (Devick 1991, p. 190; Englund 1999, p. 226; Englund and Eldredge 2001, p. 32; Brasher 2003, p. 1,054; Englund 2004, p. 27; Englund *et al.* 2007, p. 232), with at least 51 species now established (Freshwater Fishes of Hawaii 2008). The initial introduction of nonnative fish to Hawaii began with the release of food stock species by Asian immigrants at the turn of the 20th century; however, the impact of these first introductions on Hawaiian damselflies cannot be assessed because they predated the initial collection of damselflies in Hawaii (Perkins 1899, pp. 64–76). Between 1905 and 1922, fish were introduced for biological control of mosquitoes, including the mosquito fish (*Gambusia affinis*), sailfin molly (*Poecilia latipinna*), green swordtail (*Xiphophorus helleri*), moonfish (*Xiphophorus maculatus*), and guppy (*Poecilia reticulata*) (Van Dine 1907, p. 9; Englund 1999, p. 225; Brasher 2003, p. 1,054). By 1935, some Oahu damselflies were becoming less common, and these introduced fish were the suspected cause of their decline (Williams 1936, p. 313; Zimmerman 1948a, p. 341). From 1946 through 1961, several additional nonnative fish were introduced for the purpose of controlling nonnative aquatic plants and for recreational fishing (Brasher 2003, p. 1,054). During the 1980s, additional nonnative fish species were established in Oahu waters, including aggressive predators and habitat-altering species such as the channel catfish (*Ictalurus punctatus*), cichlids (e.g., *Tilapia* spp.), sailfin catfish (*Liposarcus multiradiatus*), top minnows (*Limia vittata*), and piranha (*Serrasalmus* sp.) (Devick 1991, pp. 189, 191–192; Brasher 2003, p. 1,054; Freshwater Fishes of Hawaii 2008). Englund (1999, p. 233) found several of these species to be abundant in nearly all lowland Oahu streams and water systems, although not all were as capable of colonizing higher elevation stream reaches as the introduced poeciliid species.

Geologic or manmade barriers (e.g., waterfalls, steep gradients, dry stream midreaches, or constructed diversions) appear to prevent access by nonnative fish species to stream areas above these barriers; however, there is still a chance of facilitated fish movement. For example, in 2000, a maintenance worker introduced *Tilapia* spp. into ponds

located on the grounds of Tripler Medical Army Hospital that were upslope from the remaining Oahu population of the orangeblack Hawaiian damselfly (*Megalagrion xanthomelas*) (Englund 2000, in litt.). The ponds were drained and the *Tilapia* spp. removed. The importance of their removal was underscored by the fact that a large storm caused the ponds to fill and overflow downslope into the stream supporting the damselflies soon after the *Tilapia* spp. were removed (Preston *et al.* 2007, p. 263).

Current literature indicates that the extirpation of Hawaiian damselflies from nearly all of their historical lowland habitat sites on Oahu is the result of predation by introduced nonnative fish (Moore and Gagne 1982, p. 4; Liebherr and Polhemus 1997, p. 502; Englund 1999, pp. 235–237; Brasher 2003, p. 1,055; Englund *et al.* 2007, p. 215; Polhemus 2007, pp. 238–239). The threats posed by continued introduction and establishment of nonnative fish in Hawaiian waters, and the possible movement of those nonnative species to new streams and other aquatic habitat, are ongoing and expected to continue into the future. This represents a serious threat to the survival of the blackline, crimson, and oceanic Hawaiian damselflies.

Bullfrogs and Toads

Currently there are three species of introduced aquatic amphibians on the Hawaiian Islands: the North American bullfrog (*Rana catesbeiana*), the cane toad (*Bufo marinus*), and the Japanese wrinkled frog (*Rana rugosa*). Native to the eastern United States and the Great Plains region (Moyle 1973, pp. 18–19; Bury and Whelan 1985, p. 1; Lever 2003, p. 203), the bullfrog was first introduced to Hawaii in 1899 (Bryan 1931, pp. 62–63) to help control insects, specifically the nonnative Japanese beetle (*Popillia japonica*), a significant pest of ornamental plants (Bryan 1931, p. 62). First released on the island of Hawaii, bullfrogs have demonstrated great success in establishing new populations on all the main islands (Bryan 1931, p. 63; Moyle 1973, p. 19; USGS 2008, p. 8). This species is flexible in both habitat and food requirements (McKeown 1996, pp. 24–27; Bury and Whelan 1984, pp. 3–7; Lever 2003, pp. 203–204), and can utilize any water source within its temperature range, 60°F to 75°F (16 °C to 24 °C) (DesertUSA 2008). In other areas outside its native range, the bullfrog's primary impact is the elimination of native frog species (Moyle 1973, p. 21). Englund *et al.* (2007, pp. 215, 219) found a strong

correlation between the presence of bullfrogs and the absence of Hawaiian damselflies in their study of streams on all the main Hawaiian Islands. Bullfrogs are a threat to the blackline, crimson, and oceanic Hawaiian damselflies because they are omnivorous feeders that occur in the same habitat as the damselflies on Oahu (McKeown 1996, pp. 24–27; Bury and Whelan 1984, pp. 3–7; Lever 2003, pp. 203–204). They have a negatively correlated pattern of occurrence with native damselflies, including the three species described in this final rule (Polhemus 2012, in litt.).

The effects of possible predation by the cane toad and the Japanese wrinkled frog on the blackline, crimson, and oceanic Hawaiian damselflies are unknown at this time, and we are not able to determine the magnitude or the significance of this potential threat.

Invertebrates

Predation by nonnative invertebrate pests adversely impacts 11 of the plant species (see Table 2) through mechanical damage, destruction of plant parts, parasitism, and mortality. Those introduced invertebrate pests with the greatest effect on these native plant species include at least 14 different species of slugs (Joe 2006, p. 10), the black twig borer (*Xylosandrus compactus*) (Davis 1970, pp. 38–39), and the two-spotted leafhopper (*Sophonia rufofascia*) (Fukada 1996, pp. 1–12; Hawaii Department of Agriculture 2006). The blackline, crimson, and oceanic Hawaiian damselflies face the threat of predation by ants (Borror *et al.* 1989, pp. 737–741).

Slugs

Predation by nonnative slugs is a threat to individuals of the three species of *Cyanea* (*Cyanea calycina*, *C. lanceolata*, and *C. purpurellifolia*) and the four species of *Cyrtandra* (*Cyrtandra gracilis*, *C. kaulantha*, *C. sessilis*, and *C. waiolani*) (Joe 2006, p. 10) in this final rule. On Oahu, slugs have been reported to destroy *Cyanea calycina* and *Cyrtandra kaulantha* in the wild, and have been observed eating leaves and fruit of cultivated individuals of *Cyanea* (Mehrhoff 1995, in litt.; U.S. Army Garrison 2005a, pp. 3–34, 3–51). In addition, slugs have damaged individuals of *Cyrtandra* and individuals of other species of *Cyanea* in the wild (Wood *et al.* 2001, p. 3; Sailer and Kier 2002, p. 3; PEP 2007, p. 38; PEP 2008, pp. 23, 49, 52, 53, 57). Little is known about predation of certain rare plants by slugs; however, information in the U.S. Army's 2005 "Status Report for the Makua Implementation Plan" indicates that

slugs can be a threat to all species of *Cyanea*, based on laboratory studies (U.S. Army Garrison 2005a, p. 3–51). Research investigating slug herbivory and control methods shows that slug impacts on *Cyanea* spp. seedlings result in up to 80 percent seedling mortality (U.S. Army Garrison 2005a, p. 3–51). Direct evidence of slug predation has been reported for *Cyanea calycina* and *Cyrtandra kaulantha* in the wild (see above). Although we do not have direct evidence of slug predation on the species of *Cyanea* and *Cyrtandra* that are addressed in this final rule, research and field observations indicate that predation by slugs is a threat to species of *Cyanea* and *Cyrtandra* in the wild, the five species have similar life forms (e.g., fleshy stems, fruit, and leaves) and occur in habitat similar to that of the species that have been impacted by slug herbivory in the wild and under laboratory conditions, and slugs are found in the ecosystems on Oahu in which these plants occur. It is therefore reasonable to assume *Cyanea lanceolata* and *C. purpurellifolia*, and *Cyrtandra gracilis*, *C. sessilis*, and *C. waiolani* are exposed to similar impacts from slug predation.

Black Twig Borer

The black twig borer is known to infest a wide variety of common plant taxa, including native species of *Melicope* (Davis 1970, pp. 38–39; Extension Entomology and UH–CTAHR Integrated Pest Management Program 2006, p. 1). This insect pest burrows into branches, introduces a pathogenic fungus as food for its larvae, and lays its eggs (Davis 1970, p. 39). Twigs, branches, and entire plants can be damaged or killed from an infestation (Extension Entomology and UH–CTAHR Integrated Pest Management Program 2006, p. 2). Black twig borer damage is typically observed on plants in mesic or dry forests or shrublands, and not usually observed on plants in wet forest or shrubland (Lau 2012, in litt.). On the Hawaiian Islands, the black twig borer has many hosts, disperses easily, and is probably present at most elevations up to 2,500 ft (762 m) (Howarth 1985, pp. 152–153). The black twig borer is a threat to *M. makahae*, the only species of *Melicope* that occurs in mesic forest and shrubland.

Two-Spotted Leafhopper

The effects of predation by the two-spotted leafhopper have been observed on three plant species included in this final rule, *Pleomele forbesii*, *Pteralyxia macrocarpa*, and *Zanthoxylum oahuense* (HBMP 2008). This nonnative insect damages the leaves it feeds on,

typically causing chlorosis (yellowing due to disrupted chlorophyll production) to browning and death of foliage (Hawaii Department of Agriculture 2006). The damage to plants can result in the death of affected leaves or the whole plant, owing to the combined action of its feeding and oviposition behavior (Alyokhin *et al.* 2004, p. 1). In addition to the mechanical damage caused by the feeding process, the insect may introduce plant pathogens that lead to eventual plant death (Extension Entomology and UH–CTAHR Integrated Pest Management Program 2006, p. 2). The two-spotted leafhopper is a highly polyphagous insect (it feeds on many different types of food). Sixty-eight percent of its recorded host plant species in Hawaii are fruit, vegetable, and ornamental crops, and 22 percent are endemic plants, over half of which are rare and endangered (Alyokhin *et al.* 2004, p. 6). Its range is limited to below 4,000 ft (1,200 m) in elevation, unless there is a favorable microclimate. While there has been a dramatic reduction in the number of two-spotted leafhopper populations in the past few years (possibly due to egg parasitism), this nonnative insect has not been eradicated, and predation by this nonnative insect remains a threat (Fukada 2007, pers. comm.).

Ants

Ants are not a natural component of Hawaii's arthropod fauna, and native species evolved in the absence of predation pressure from ants. Ants can be particularly destructive predators because of their high densities, recruitment behavior, aggressiveness, and broad range of diet (Reimer 1993, pp. 14, 17–18). The threat of ant predation on the blackline, crimson, and oceanic Hawaiian damselflies is amplified by the fact that most ant species have winged reproductive adults (Borror *et al.* 1989, p. 738) and can quickly establish new colonies in additional suitable habitats (Staples and Cowie 2001, pp. 53–55). These attributes allow some ants to destroy otherwise geographically isolated populations of native arthropods (Nafus 1993, pp. 19, 22–23).

At least 47 species of ants are known to be established on the Hawaiian Islands (Hawaii Ants 2008, pp. 1–11), and at least four particularly aggressive species, the big-headed ant (*Pheidole megacephala*), the long-legged ant (also known as the yellow crazy ant, *Anoplolepis gracilipes*), *Solenopsis papuana* (NCN), and *Solenopsis geminata* (NCN) have severely impacted the native insect fauna, likely including

native damselflies (Zimmerman 1948b, p. 173; Reimer 1993, pp. 11–13; Hawaii Ecosystems at Risk (HEAR) database 2007). Numerous other species of ants are recognized as threats to Hawaii's native invertebrates, and an unknown number of new species are established every few years (Staples and Cowie 2001, p. 53). Due to their preference for drier habitat sites, ants are less likely to occur in high densities in the aquatic habitat currently occupied by the blackline, crimson, and oceanic Hawaiian damselflies. However, some species of ants (e.g., the long-legged ant and *Solenopsis papuana*) have increased their range into this aquatic habitat. Furthermore, the presence of ants in nearly all of the lower elevation, historical habitat sites may preclude the future recolonization of these areas by damselflies, including the blackline, crimson, and oceanic Hawaiian damselflies. Damselfly naiads may be particularly susceptible to ant predation while perching on vegetation or rocks when they crawl out of the water or seek a terrestrial location for their metamorphosis into the adult stage (Polhemus 2008b, in litt.). Newly emerged adult damselflies are also susceptible to predation until their wings have sufficiently hardened to permit flight (Polhemus and Asquith 1996, p. 4).

The long-legged ant appeared in Hawaii in 1952, and now occurs on Kauai, Oahu, Maui, and Hawaii (Reimer *et al.* 1990, p. 42). It inhabits low- to mid-elevation (less than 2,000 ft (600 m)) rocky areas of moderate rainfall (less than 100 in (250 cm) annually) (Reimer *et al.* 1990, p. 42). Direct observations indicate that Hawaiian arthropods are susceptible to predation by this species (Hardy 1979, p. 34; Gillespie and Reimer 1993, p. 21). *Solenopsis papuana* is the only abundant, aggressive ant that has invaded intact mesic and wet forest from sea level to 3,600 ft (1,100 m) on all the main Hawaiian Islands. Colonies reach dense populations, and ranges of this species are expanding on all islands (Reimer 1993, p. 14). The blackline, crimson, and oceanic Hawaiian damselflies' historical ranges were from sea level to over 2,400 ft (732 m) (Williams 1936, p. 318; Englund 1999, pp. 229–230), and they are currently found between 80 and 2,500 ft (24 and 760 m) in elevation (Polhemus 2008a, in litt.; Polhemus and Asquith 1996, p. 77; HBMP 2008). It is likely, based on our knowledge of the expanding range of *Solenopsis papuana*, that it threatens all populations of these three Hawaiian damselflies. The rarity or disappearance of the native blackline,

crimson, and oceanic damselfly species from historical observation sites is due to a variety of factors. While there is no documentation that conclusively ties the decrease in the blackline, crimson, and oceanic Hawaiian damselfly observations to the establishment of nonnative ants in the lowland mesic and lowland wet habitats, the presence of ants in these habitats, the knowledge that they prey on native invertebrates, and the decline of damselfly observations in some areas in these habitats suggest that nonnative ants play a role in the decline of some populations of these damselflies.

Summary of Disease or Predation

We are unaware of any information that indicates that disease is a threat to the 23 species. We consider predation and parasitism by nonnative animal species (pigs, goats, rats, fish, bullfrogs, and invertebrates) to pose an ongoing threat to 22 of the 23 species in this final rule throughout their ranges, and will continue to be so in the foreseeable future, for the following reasons:

(1) Observations and reports have documented that pigs and goats browse on and trample 19 of the 20 plant species, and browse on and trample the host plants of the other species (see Table 2); other studies demonstrate the negative impacts of ungulate browsing and trampling on native plant species of the Hawaiian islands (Spatz and Mueller-Dombois 1973, p. 874; Diong 1982, p. 160; Cuddihy and Stone 1990, p. 67).

(2) Nonnative invertebrates and rats cause mechanical damage to plants and destruction of plant parts (branches, fruits, seeds), affecting 13 of the 20 plant species in this final rule (see Table 2).

(3) The absence of Hawaiian damselflies (including the blackline, crimson, and oceanic Hawaiian damselflies) in streams and other aquatic habitat on the main Hawaiian Islands is strongly correlated with the presence of predatory nonnative fish as documented in numerous observations and reports (Englund 1999, p. 237; Englund 2004, p. 27; Englund *et al.* 2007, p. 215), which suggests nonnative predatory fishes eliminate native Hawaiian damselflies from these aquatic habitats. There are 70 introduced species of nonnative fishes, with over 51 species established in freshwater habitats on the Hawaiian Islands from sea level to over 3,800 ft (1,150 m) in elevation (Devick 1991, p. 190; Englund and Eldredge 2001, p. 32; Brasher 2003, p. 1,054; Englund 1999, p. 226; Englund 2004, p. 27; Englund *et al.* 2007, p. 232). Accordingly, predation by nonnative fishes is a serious and ongoing threat to

the blackline, crimson, and oceanic Hawaiian damselflies (see Table 2).

(4) Damselfly naiads are vulnerable to predation by ants, and the ranges of the blackline, crimson, and oceanic Hawaiian damselflies overlap that of particularly aggressive, nonnative, predatory ant species that currently occur from sea level to 2,000 ft (610 m) in elevation on all of the main Hawaiian Islands. We therefore consider the three Hawaiian damselflies in this final rule to be facing the threat of predation by these nonnative ants.

(5) Englund *et al.* (2007, pp. 215, 219) found a strong correlation between the presence of nonnative bullfrogs and the absence of Hawaiian damselflies. Bullfrogs are reported from riparian habitat on all the main Hawaiian Islands, except Kahoolawe and Niihau. Bullfrogs prey on almost anything that moves, including a wide variety of insects, invertebrates, and vertebrates (McKeown 1996, p. 24). The blackline, crimson, and oceanic Hawaiian damselflies also use riparian habitat, and face the threat of predation by bullfrogs.

D. The Inadequacy of Existing Regulatory Mechanisms

Feral Ungulates

Nonnative ungulates pose a major ongoing threat to 19 of the 20 plant species through destruction and degradation of terrestrial habitat, and through direct predation of 19 of the 20 plant species. The State of Hawaii provides game mammal (feral pigs and goats) hunting opportunities on 12 State-designated public hunting areas on the island of Oahu (H.A.R. sec. 13–123; HDLNR 2009, pp. 25–30). The State's management objectives for game animals range from maximizing public hunting opportunities (e.g., sustained yield) in some areas to removal by State staff, or their designees, in other areas (H.A.R. sec. 13–123). Approximately 23 percent (10,168 ac (4,119 ha)) of the critical habitat being designated in this final rule is in State hunting areas. Fifteen of the 20 plant species and all three damselfly species have populations in areas where terrestrial habitat may be managed for game enhancement, and where game populations are maintained at certain levels through public hunting (HBMP 2008; H.A.R. sec. 13–123). Public hunting areas are not fenced, and game mammals have unrestricted access to most areas across the landscape, regardless of underlying land use designation. While fences are sometimes built to provide protection from game mammals, the current number and

locations of fences are not adequate to prevent habitat destruction and degradation of the terrestrial habitat of 22 of the 23 species, and direct predation of 19 of the 20 plant species on Oahu. However, the State game animal regulations are not designed nor intended to provide habitat protection, and there are no other regulations designed to address habitat protection from ungulates.

Stream Flow

In Hawaii, instream flow is regulated by establishing standards on a stream-by-stream basis. The standards currently in effect represent flow conditions in 1988, the year the administrative rules were adopted (State Water Code, Haw. Rev. Stat. 174C–71, and Administrative Rules of the State Water Code, Title 13, Chapter 169–44–49). The State of Hawaii considers all natural flowing surface water (streams, springs, and seeps) as State property (Haw. Rev. Stat. 174C), and the Hawaii Department of Land and Natural Resources (HDLNR) has management responsibility for the aquatic organisms in these waters (Haw. Rev. Stat. Annotated, 1988, Title 12; 1992 Cumulative Supplement). Accordingly, damselfly populations in all natural flowing surface waters are under jurisdiction of the State of Hawaii, regardless of property ownership. This includes the blackline, crimson, and oceanic Hawaiian damselfly populations.

The State of Hawaii manages the use of surface and ground water resources through the Commission on Water Resource Management (Water Commission), as mandated by the 1987 State Water Code (State Water Code, Haw. Rev. Stat. 174, and Administrative Rules of the State Water Code, Title 13, Chapters 168 and 169). Because of the complexity of establishing instream flow standards (IFS) for approximately 376 perennial streams, the Water Commission established interim IFS at status quo levels in 1987 (Hawaii Commission on Water Resource Management 2009c). In the Waiahole Ditch Combined Contested Hearing on Oahu (1997–2006), the Hawaii Supreme Court determined that status quo interim IFS were not adequate, and required the Water Commission to reassess the IFS for Waiahole Ditch and other streams Statewide (Case No. CCH–OA95–1). The Water Commission has been gathering information to fulfill this requirement since 2006, but no IFS recommendations have been made to date (Hawaii Commission on Water Resource Management 2009c). Therefore, we find that the existing State regulations are inadequate to

maintain stream flow year round for the different life stages of the three damselflies. These threats are ongoing and are expected to continue into the future.

Introduction of Nonnative Species

The Hawaii Department of Agriculture (HDOA) is the lead State agency in protecting Hawaii's agricultural and horticultural industries, animal and public health, natural resources, and environment from the introduction of nonnative, invasive species (HDLNR 2003, p. 3–10). While there are several State agencies (HDOA, HDLNR, Hawaii Department of Health) authorized to prevent the entry of pest species into the State, the existing regulations are inadequate for the reasons discussed in the sections below.

In 1995, a partnership, Coordinating Group on Alien Pest Species (CGAPS), comprised primarily of managers from every major Federal, State, county, and private agency and organization involved in invasive species work in Hawaii, was formed in an effort to influence policy and funding decisions, improve communication, increase collaboration, and promote public awareness (CGAPS 2009). This group facilitated the formation of the Hawaii Invasive Species Council (HISC), which was created by gubernatorial executive order in 2002, to coordinate local initiatives for the prevention and control of invasive species by providing policy level direction and planning for the State departments responsible for invasive species issues. In 2003, the governor signed into law Act 85, which conveys statutory authority to the HISC to continue to coordinate approaches among the various State and Federal agencies, and international and local initiatives, for the prevention and control of invasive species (HDLNR 2003, p. 3–15; HISC 2009a; Haw. Rev. Stat. sec. 194–2(a)). Some of the recent priorities for the HISC include interagency efforts to control nonnative species such as the plants *Miconia calvescens* (miconia) and *Cortaderia* sp. (pampas grass), coqui frogs (*Eleutherodactylus coqui*), and ants (HISC 2009a). Since 2009, State funding for HISC has been cut by approximately 50 percent (total funding dropped from \$4 million in FY 2009 to \$2 million in FY 2010, and to \$1.8 mil in FY 2011 (Atwood 2012, in litt.)). Congressional earmarks made up some of the shortfall in State funding in 2010 and into 2011. These funds supported ground crew staff that would have been laid off due to the shortfall in State funding (Clark 2012, in litt.). Currently (in 2012) the HISC budget is relatively flat (i.e., State

funding is equal to funding provided in 2009). Current positions supported by HISC are fewer than those supported in 2009; most of the positions have been lost through attrition and have not been refilled (Atwood 2012, in litt.; Clark 2012, in litt.). In addition, HISC funds fewer projects and provides fewer services (Atwood 2012, in litt.; Clark 2012, in litt.) than in 2009 and earlier. Many projects (such as invasive species and biological control research) that were previously funded by HISC are receiving negligible HISC funding or remain unfunded (Atwood 2012, in litt.; Clark 2012, in litt.).

Nonnative Aquatic Species—The importation of nondomestic animals, including aquatic species, is regulated by a permit system (H.A.R. sec. 4–71) managed through the Hawaii Department of Agriculture (HDOA). The HDOA's Board of Agriculture maintains lists of nondomestic animals that are prohibited from entry, animals with entry restrictions, and those that require a permit for import and possession. The HDOA requires a permit to import animals, and conditionally approves entry for individual possession, businesses (e.g., pet/retail trade, retail sales, food consumption), or institutions.

The Division of Aquatic Resources (DAR), within the State's HDLNR, manages the aquatic resources of the State (Hawaii DAR 2009) and is responsible for conserving, protecting, and enhancing the State's renewable resources of aquatic life and habitat (HDLNR 2003, p. 3–13). The release of live nonnative fish or other live nonnative aquatic life into any waters of the State is prohibited (Haw. Rev. Stat. sec. 187A–6.5). The DAR has the authority to seize, confiscate, or destroy as a public nuisance, any fish or other aquatic life found in any waters of the State and whose importation is prohibited or restricted pursuant to rules of the HDOA (section 187A–2 (4 Haw. Rev. Stat. sec. 187A–6.5)). State and Federal regulations are in place to prevent the unauthorized entry of nonnative aquatic animals such as fish and amphibians into the State of Hawaii; however, their intentional or inadvertent introduction and movement between islands and between watersheds continues, although prohibited (HDOA 2003, pp. 2–12–2–14). Further, there is insufficient regulatory capacity to adequately enforce such regulations or to provide for sufficient inspection services and monitoring, although this priority need is recognized (Cravalho and Wilson 2009, in litt.).

Nonnative Invertebrate Species—

Predation by nonnative invertebrate pests (e.g., slugs, black twig borer, two-spotted leafhopper) adversely impacts 13 of the plant species (see Table 2). In addition, naiads of the blackline, crimson, and oceanic Hawaiian damselflies are vulnerable to predation by ants. The decline of damselfly observations and the establishment of ants in lowland mesic and lowland wet habitats on Oahu suggest that the presence of nonnative ants in these habitats may preclude their occupancy by native damselflies (see *Factor C. Disease or Predation*). The prevention and control of introduction of pest species in Hawaii is the responsibility of Hawaii State government and Federal agencies, along with a few private organizations. Even though these agencies have regulations and some controls in place, the introduction and movement of nonnative invertebrate pest species between islands and from one watershed to the next continues. For example, an average of 20 new alien invertebrate species were introduced to Hawaii per year since 1970, an increase of 25 percent over the previous totals between 1930 to 1970 (The Nature Conservancy of Hawaii (TNCH) 1992, p. 8).

Nonnative Plant Species—Nonnative plants destroy and modify habitat throughout the ranges of each of the 20 plant species being addressed in this final rule. As such, they represent a serious and ongoing threat to each of these plant species. In addition, nonnative plants have been shown to outcompete native plants and convert native-dominated plant communities to nonnative plant communities (see "Habitat Destruction and Modification by Nonnative Plants," under Factor A, above). The HDOA regulates the import of plants into the State from domestic origins under Hawaii State law (Haw. Rev. Stat. Ch. 150A). While all plants require inspection upon entry into the State and must be "apparently free" of insects and diseases, not all plants require import permits. Parcels brought into the State by mail or cargo must be clearly labeled as "plant materials" or "agricultural commodities," but it is unlikely that all of these parcels are inspected or monitored prior to delivery in Hawaii. Shipments of plant material into Hawaii must be accompanied by an invoice or packing manifest listing the contents and quantities of the items imported, but, again, it is unclear if all of these shipments are inspected or monitored prior to delivery (HDOA 2009).

There are only 12 plant crops that are regulated (H.A.R. 4-70) to some degree,

including sugarcane and grasses, pineapple and other bromeliads, coffee, cruciferous vegetables, orchids, banana, passion fruit, pine, coconut, hosts of European corn borer, palms, and hosts of Caribbean fruit fly (HDLNR 2003, p. 3-11). The HDOA also maintains the State list of noxious weeds, and these plants are restricted from entry into the State except by permit from the HDOA's Plant Quarantine Branch. Although the State has general guidelines for the importation of plants, and regulations are in place regarding the plant crops mentioned above, the intentional or inadvertent introduction of nonnative plants outside the regulatory process and movement of species between islands and from one watershed to the next continues, which represents a threat to native flora for the reasons described above. In addition, government funding is inadequate to provide for sufficient inspection services and monitoring. One study concluded that the plant importation laws virtually ensure new invasive plants will be introduced via the nursery and ornamental trade, and that outreach efforts cannot keep up with the multitude of new invasive plants being distributed. The author states the only thing that wide-scale public outreach can do in this regard is to let the public know new invasive plants are still being sold, and they should ask for noninvasive or native plants instead (Martin 2007, in litt.).

On the basis of the above information, existing State and Federal regulatory mechanisms are not adequately preventing the introduction of nonnative species into Hawaii via interstate and international mechanisms, or via intrastate movement of nonnative species between islands and watersheds in Hawaii. Therefore, State and Federal regulatory mechanisms do not adequately protect the 23 species being addressed in this final rule from the threat of new introductions of nonnative species or the continued expansion of nonnative species populations on and between islands and watersheds. Nonnative species may prey upon, modify or destroy habitat of, or directly compete with one or more of the 23 species for food, space, and other necessary resources. The impacts from these introduced threats are ongoing and are expected to continue in the foreseeable future.

Summary of Inadequacy of Existing Regulatory Mechanisms

The State Water Code does not provide for permanent or minimum IFS for the protection of aquatic ecosystems

upon which the three damselfly species in this final rule depend, and does not contain a regulatory mechanism for identifying and protecting damselfly habitat (Factor A). Existing State and Federal regulatory mechanisms are not preventing the introduction into Hawaii of nonnative species or the spread of nonnative species between islands and watersheds. Habitat-altering nonnative plant species (Factor A) and predation by nonnative animal species (Factor C) pose a major ongoing threat to the 23 species being addressed in this final rule. Because these regulatory mechanisms are inadequate to maintain habitat for the 23 species, and to prevent the spread of nonnative species, the inadequacy of existing regulatory mechanisms is considered to be a serious threat, both now and in the foreseeable future. Each of the 20 plant species experiences threats from habitat degradation and loss by nonnative plants (Factor A), and 19 of the 20 plants experience threats from nonnative animals (Factor A and Factor C). The three damselflies experience threats from habitat degradation and loss by stream channeling, conversion, and similar activities (Factor A), and by predation by nonnative fish and ants (Factor C). Therefore, the inadequacy of the regulatory mechanisms to address stream flow management and nonnative species is a threat to all 23 species.

E. Other Natural or Manmade Factors Affecting Their Continued Existence

Other factors that pose threats to some or all of the 23 species include small number of populations and small population sizes, human trampling as a result of hiking and other activities, loss of host plants, and lack of regeneration. Each threat is discussed in detail below, along with identification of which species are affected by these threats.

Small Number of Populations and Individuals

Species that are endemic to single islands are inherently more vulnerable to extinction than are widespread species, because of the increased risk of genetic bottlenecks; random demographic fluctuations; climate change effects; and localized catastrophes such as hurricanes, landslides, rockfalls, drought, and disease outbreaks (Pimm *et al.* 1988, p. 757; Mangel and Tier 1994, p. 607). These problems are further magnified when populations are few and restricted to a very small geographic area, and when the number of individuals of each population is very small. Populations with these characteristics face an increased likelihood of stochastic

extinction, due to changes in demography, the environment, genetics, or other factors (Gilpin and Soule 1986, pp. 24–34). Small, isolated populations often exhibit reduced levels of genetic variability, which diminishes the species' capacity to adapt and respond to environmental changes, thereby lessening the probability of long-term persistence (e.g., Barrett and Kohn 1991, p. 4; Newman and Pilson 1997, p. 361). The problems associated with small population size and vulnerability to random demographic fluctuations or natural catastrophes are further magnified by synergistic interactions with other threats, such as those discussed above (see discussions under Factors A and C).

Very small plant populations may experience reduced reproductive vigor due to ineffective pollination or inbreeding depression. This is particularly true for functionally unisexual plants like *Psychotria hexandra* ssp. *oahuensis*, in which staminate (male) and pistillate (female) flowers occur on separate individuals. Isolated individuals have difficulty achieving natural pollen exchange, which decreases the production of viable seed. Populations are also impacted by demographic stochasticity, through which populations are skewed toward either male or female individuals by chance.

The following nine plant species in this final rule face the threat of limited numbers (e.g., they total fewer than 50 individuals): *Cyanea purpurellifolia*, *Cyrtandra gracilis*, *C. kaulantha*, *C. waiolani*, *Melicope hiiakae*, *Platydesma cornuta* var. *cornuta*, *Psychotria hexandra* ssp. *oahuensis*, *Tetraplasandra lydgatei*, and *Zanthoxylum oahuense*. We consider small population size to be a threat to these species for the following reasons:

- *Cyanea purpurellifolia* is susceptible to reduced reproductive vigor due to the low number (20) of individuals remaining (DLNR 2005b, p. 2). Although facing severe threats from feral pigs, none of the individuals of this species are protected from ungulate predation (PEP 2007, p. 13).

- *Cyrtandra gracilis* is known only from a single occurrence, with six to eight individuals (NTBG Provenance Reports 2002, p. 1 and 2004, p. 1; PEP 2007, p. 16).

- The only known wild populations of *Cyrtandra kaulantha* and *Psychotria hexandra* ssp. *oahuensis* are facing imminent threats from flooding, landslides, and rock falls because of their locations in steep gulches (PEP 2006, p. 46, 51; PEP 2007, p. 25).

- The last confirmed observation of *Cyrtandra waiolani* in the wild was approximately 40 years ago. The identification of a possible wild individual of *C. waiolani* in 2005 was confirmed not to be this species. In addition, there are no tissues, propagules, or seeds in storage or propagation that have positively been identified (PEP 2007, p. 19; Bakutis 2008, in litt.; Lau 2011, in litt.).

- *Melicope hiiakae* is susceptible to reduced reproductive vigor due to the lack of pollination and seed predation (NTBG Report 2007b, p. 4; Perlman, 2007b, in litt.).

- *Platydesma cornuta* var. *cornuta* individuals are widely scattered in the Koolau Mountains, and are susceptible to reduced reproductive vigor (HBMP 2008).

- The range of known occurrences of *Tetraplasandra lydgatei* has been reduced from 10 mi (16 km) to 2 mi (3 km) since 2005, and consists of 2 occurrences totaling 8 individuals (HBMP 2008). These individuals are showing a decline in health (Bakutis 2008, in litt.).

- Botanists have observed a steady decline in the numbers of individuals of *Zanthoxylum oahuense* over the last 9 years. This species is also susceptible to infestation by the two-spotted leafhopper (Garnett and Obata 1999, in litt.).

The blackline, crimson, and oceanic Hawaiian damselflies face the threat of limited numbers. Jordan *et al.* (2007, p. 247) conducted a genetic and comparative phylogeography analysis (study of historical processes responsible for genetic divergence within a species) of four Hawaiian *Megalagrion* species, including Pacific Hawaiian damselfly (*Megalagrion pacificum*), an endangered species (75 FR 35990; June 24, 2010), and the orangeblack Hawaiian damselfly, a candidate species (76 FR 66370; October 26, 2011). This analysis demonstrated *Megalagrion* populations with low genetic diversity are at greater risk of decline and extinction than those with high genetic diversity. The authors found that low genetic diversity was observed in populations known to be bottlenecked or relictual (groups of animals or plants that exist as a remnant of a formerly widely distributed group), including Oahu and Maui populations of orangeblack Hawaiian damselfly and Pacific Hawaiian damselfly. Although this study did not include an analysis of the blackline, crimson, or oceanic Hawaiian damselflies, given that these five species have similar habitat, breeding, and life-history requirements, are related phylogenetically (same

genus), and have low numbers of populations and individuals, it is reasonable to assume that populations of the blackline, crimson, and oceanic Hawaiian damselflies (each known from fewer than 20 populations) are also at great risk of decline and extinction.

Human Trampling and Hiking

Visitors on foot, horseback, and motorbikes may pose threats to *Cyanea calycina* directly due to trampling and other direct damage, and indirectly due to being a source of fire ignition in areas in the southern Waianae Mountains (TNCH 1997, p. 10). Human impacts, such as trampling by hikers, has been documented as a threat to *C. calycina* in the northern Waianae Mountains, between Kaala and Puu Kalena summits (Wood 2001, in litt.). The largest known population of *Cyrtandra sessilis* is located along a popular hiking trail in the Koolau Mountains, and individuals climbing and hiking off the established trail to visit this occurrence could trample individual plants and contribute to soil compaction and erosion, preventing growth and establishment of seedlings (Bakutis 2008). This type of activity has been observed with other native species (Wood 2001, in litt.; Hawaii Rare Plant Restoration Group (HRPRG) 2007, p. 2). *Doryopteris takeuchii* occurs on the slopes of Diamond Head crater, a popular location for visitation by tour groups and hikers (HBMP 2008). Individuals leaving established trails will inadvertently trample plants and contribute to erosion of the steep hillsides where the plants are found. Field biologists have also observed trampling of vegetation near populations of *Melicope hiiakae* in the Koolau Mountains, suggesting that hikers could also be a threat to this species (HRPRG 2007, p. 2).

Loss of Host Plants and Loss of Regeneration

One species in this final rule, *Korthalsella degeneri*, is an obligate parasite on two native host plants, *Sapindus oahuensis* and *Nestegis sandwicensis*, which occur in the dry cliff ecosystem of the Waianae Mountains of Oahu. Introduced ungulates are a threat to the host plants, because of trampling and topsoil disruption, leading to erosion and the establishment and spread of nonnative plants (Factor A). Nonnative plants are a threat to *K. degeneri*, because they: (1) Degrade habitat and outcompete native plants; (2) can increase the intensity, extent, and frequency of fire, converting native shrubland and forest to land dominated by alien grasses; and (3) may

cause the loss of the native host plants upon which *K. degeneri* depends (Factor A). In addition, the host plants are at risk of predation by feral ungulates, although ungulates are unlikely to be a direct threat to *K. degeneri* (Factor C), because of its parasitic characteristics.

Lack of regeneration or low levels of regeneration (i.e., reproduction) in the wild has been documented, and represents a threat to, *Melicope makahae* and *Pleomele forbesii* (HBMP 2008; Lau 2001, in litt.). There are four scattered populations of *Melicope makahae* in the Waianae Mountains. Two of these populations are at risk of extirpation because only one adult plant has been observed at one location and one adult plant and a single juvenile plant have been observed at the second location. There are 19 populations of *P. forbesii* in the Waianae Mountains, and only one population in the Koolau Mountains. The Koolau population is at risk of extirpation because of very few (if any) seedlings or juvenile plants have been observed, which indicates a lack of reproduction.

Summary of Other Natural or Manmade Factors Affecting Their Continued Existence

We consider the limited numbers of populations and few (fewer than 50) individuals to be serious and ongoing threat to at least nine plant species in this final rule because: (1) These species may experience reduced reproductive vigor due to ineffective pollination or inbreeding depression; (2) they may experience reduced levels of genetic variability, leading to diminished capacity to adapt and respond to environmental changes, thereby lessening the probability of long-term persistence; and (3) a single catastrophic event may result in extirpation of remaining populations and extinction of the species. This threat applies to the entire range of each species.

The threat to the blackline, crimson, and oceanic Hawaiian damselflies from limited numbers of populations and individuals is ongoing and is expected to continue into the future because: (1) These species may experience reduced reproductive vigor due to inbreeding depression; (2) they may experience reduced levels of genetic variability, leading to diminished capacity to adapt and respond to environmental changes, thereby lessening the probability of long-term persistence; (3) a single catastrophic event (e.g., hurricane, landslide) may result in extirpation of remaining populations and extinction of these species; and (4) species with few known locations, such as the blackline, crimson, and oceanic Hawaiian

damselflies, are less resilient to threats that might otherwise have a relatively minor impact on widely distributed species. For example, the reduced availability of breeding habitat or an increase in predation of naiads that might be absorbed in widely distributed species could result in a significant decrease in survivorship or reproduction of a species with limited distribution. The limited distribution of these three species thus magnifies the severity of the impact of the other threats discussed in this final rule.

In addition, the threat to *Cyanea calycina*, *Cyrtandra sessilis*, *Doryopteris takeuchii*, and *Melicope hiiakae* from human activities (e.g., trampling and hiking) is ongoing and expected to continue into the future because populations of all of these species are located near hiking trails or in areas used for recreational activities, and the effect of these activities could lead to injury and death of individual plants.

The threat to *Korthalsella degeneri* from loss of its host plants is ongoing and expected to continue into the future because threats to its host plants from nonnative plants and feral ungulates are uncontrolled. Finally, we consider the threat to *Melicope makahae* and *Pleomele forbesii* from lack of regeneration to be ongoing and expected to continue into the future because, with their small numbers in the wild, any competition from nonnative plants or habitat modification or predation by ungulates could lead to the extirpation of these species.

Determination

We have carefully assessed the best scientific and commercial information available regarding threats to each of the 23 Oahu species. We find that all of these species face threats, which are ongoing and expected to continue into the future throughout their ranges, from the present destruction and modification of their habitats, primarily from introduced ungulates and nonnative plants. Six of these species (*Bidens amplexans*, *Cyanea calycina*, *Doryopteris takeuchii*, *Korthalsella degeneri*, *Pleomele forbesii*, and *Pteralyxia macrocarpa*) experience threats from habitat destruction and modification from fire, and 14 species (*Bidens amplexans*, *Cyanea lanceolata*, *Cyrtandra kaulantha*, *C. sessilis*, *Doryopteris takeuchii*, *Melicope christophersenii*, *M. hiiakae*, *M. makahae*, *Platydesma cornuta* var. *cornuta*, *P. cornuta* var. *decurrens*, *Psychotria hexandra* ssp. *oahuensis*, and the blackline, crimson, and oceanic Hawaiian damselflies) experience threats from the destruction and

modification of their habitats from hurricanes, landslides, rockfalls, and flooding. In addition, we are concerned about the effects of projected climate change but recognize there is limited information on the exact nature of impacts from climate change (Factor A). There is a serious threat of widespread impacts of predation and herbivory on 19 of the 20 plant species (all plant species except *Doryopteris takeuchii*) by nonnative pigs, goats, rats, and invertebrates; and likely by predation on the three damselflies (blackline, crimson, and oceanic Hawaiian damselflies) by nonnative fish, bullfrogs, and ants (Factor C). The inadequacy of existing regulatory mechanisms (e.g., inadequate protection of habitat and inadequate protection from the introduction of nonnative species) poses a current and ongoing threat to all 23 species (Factor D). There are current and ongoing threats to nine plant species (*Cyanea purpurellifolia*, *Cyrtandra gracilis*, *C. kaulantha*, *C. waiolani*, *Melicope hiiakae*, *Platydesma cornuta* var. *cornuta*, *Psychotria hexandra* ssp. *oahuensis*, *Tetraplasandra lydgatei*, and *Zanthoxylum oahuense*) and the three damselflies due to factors associated with small numbers of populations and individuals (Factor E); to *Melicope makahae* and *Pleomele forbesii* from the lack of regeneration (Factor E); to *Cyanea calycina*, *Cyrtandra sessilis*, *Doryopteris takeuchii*, and *Melicope hiiakae* from trampling (Factor E); and to *Korthalsella degeneri* from the loss of native host plants (Factor E) (see Table 2). In addition, the blackline, crimson, and oceanic Hawaiian damselflies experience threats from habitat degradation and loss due to agriculture and urban development, by stream diversion and channelization, and by dewatering of aquifers (Factor A). These threats are exacerbated by these species' inherent vulnerability to extinction from stochastic events at any time because of their endemism, small numbers of individuals and populations, and restricted habitats.

The Act defines an endangered species as any species that is "in danger of extinction throughout all or a significant portion of its range" and a threatened species as any species that is "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." We find that each of these endemic species is presently in danger of extinction throughout its entire range, based on the immediacy, severity, and scope of the threats described above. Based on our analysis, we have no

reason to believe that population trends for any of the species addressed in this final rule will improve, nor will the effects of current threats acting on the species be ameliorated in the foreseeable future. Therefore, on the basis of the best available scientific and commercial information, we are listing the following 23 species as endangered in accordance with section 3(6) of the Act: *Bidens amplexans*, *Cyanea calycina*, *Cyanea lanceolata*, *Cyanea purpurellifolia*, *Cyrtandra gracilis*, *Cyrtandra kaulantha*, *Cyrtandra sessilis*, *Cyrtandra waiolani*, *Doryopteris takeuchii*, *Korthalsella degeneri*, *Melicope christophersenii*, *Melicope hiiakae*, *Melicope makahae*, *Platydesma cornuta* var. *cornuta*, *Platydesma cornuta* var. *decurrens*, *Pleomele forbesii*, *Psychotria hexandra* ssp. *oahuensis*, *Pteryluxia macrocarpa*, *Tetraplasandra lydgatei*, and *Zanthoxylum oahuense*; and the blackline Hawaiian damselfly, crimson Hawaiian damselfly, and oceanic Hawaiian damselfly.

Under the Act and our implementing regulations, a species may warrant listing if it is endangered or threatened throughout all or a significant portion of its range. Each of the 23 endemic Oahu species in this final rule is highly restricted in its range, and the threats occur throughout its range. Therefore, we assessed the status of each species throughout its entire range. In each case, the threats to the survival of these species occur throughout the species' entire range and are not restricted to any particular portion of that range. Accordingly, our assessment and determination applies to each species throughout its entire range.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain activities. Recognition through listing results in public awareness and conservation by Federal, State, and local agencies, private organizations, and individuals. The Act encourages cooperation with the States and requires that recovery actions be carried out for all listed species. The protection measures required of Federal agencies and the prohibitions against certain activities involving listed animals and plants are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the

recovery of these listed species, so that they no longer need the protective measures of the Act. Subsection 4(f) of the Act requires the Service to develop and implement recovery plans for the conservation of endangered and threatened species unless it would not promote the conservation of the species. The recovery planning process involves the identification of actions that are necessary to halt or reverse the species' decline by addressing the threats to its survival and recovery. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

Recovery planning includes the development of a recovery outline at the same time or shortly after a species is listed, preparation of a draft and final recovery plan, and revisions to the plan as significant new information becomes available. The recovery outline guides the immediate implementation of urgent recovery actions and describes the process to be used to develop a recovery plan. The recovery plan identifies site-specific management actions that will achieve recovery of the species, measurable criteria that determine when a species may be downlisted or delisted, and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams are often established to develop recovery plans. When completed, the recovery outlines, draft recovery plans, and the final recovery plans will be available from our Web site (<http://www.fws.gov/endangered>), or from our Pacific Islands Fish and Wildlife Office (see ADDRESSES).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (e.g., restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may occur primarily or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private and State lands.

Funding for recovery actions are available from a variety of sources, including Federal budgets, State programs, and cost share grants for non-Federal landowners, the academic

community, and nongovernmental organizations. In addition, under section 6 of the Act, the State of Hawaii will be eligible for Federal funds to implement management actions that promote the protection and recovery of the 23 species in this rule. Information on our grant programs that are available to aid species recovery can be found at: <http://www.fws.gov/grants>.

Please let us know if you are interested in participating in recovery efforts for these listed species. Additionally, we invite you to submit any new information on these species whenever it becomes available and any information you may have for recovery planning purposes (see ADDRESSES).

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(1) of the Act mandates that all Federal agencies shall utilize their authorities in furtherance of the purposes of the Act by carrying out programs for the conservation of endangered and threatened species listed under section 4 of the Act. Section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or result in destruction or adverse modification of critical habitat. If a Federal action may affect the continued existence of a listed species or its critical habitat, the responsible Federal agency must enter into consultation with the Service.

For the 23 plants and animals listed as endangered in this final rule, Federal agency actions that may require consultation as described in the preceding paragraph include, but are not limited to, actions within the jurisdiction of the Natural Resources Conservation Service, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and branches of the Department of Defense (DOD). Examples of these types of actions include activities funded or authorized under the Farm Bill Program, Environmental Quality Incentives Program, Ground and Surface Water Conservation Program, Clean Water Act (33 U.S.C. 1251 *et seq.*), Partners for Fish and Wildlife Program, and DOD construction activities related to training or other military missions.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered wildlife and plants.

The prohibitions, codified at 50 CFR 17.21 for wildlife and 17.61 for plants, apply. For listed wildlife species, these prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import, export, ship in interstate commerce or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. In addition, for plants listed as endangered, the prohibitions include import or export, malicious damage or destruction on areas under Federal jurisdiction, and the removal, cutting, digging up, or damaging or destroying of such plants in knowing violation of any State law or regulation, including State criminal trespass law. Certain exceptions to the prohibitions apply to agents of the Service and State conservation agencies.

We may issue permits to carry out otherwise prohibited activities involving endangered or threatened wildlife and plant species under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22 and 17.62 for endangered wildlife and plants, respectively. With regard to endangered wildlife, a permit must be issued for the following purposes: for scientific purposes, to enhance the propagation and survival of the species, and for incidental take in connection with otherwise lawful activities. With regard to endangered plants, a permit must be issued for the following purposes: for scientific purposes or for the enhancement of propagation or survival. Requests for copies of the regulations regarding listed species and inquiries about prohibitions and permits may be addressed to U.S. Fish and Wildlife Service, Ecological Services, Eastside Federal Complex, 911 NE. 11th Avenue, Portland, OR 97232-4181 (telephone 503-231-6158; facsimile 503-231-6243).

It is our policy, as published in the *Federal Register* on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed, those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of a listing on proposed and ongoing activities within the range of a listed species. The following activities could potentially result in a violation of section 9 of the Act; this list is not comprehensive:

(1) Unauthorized collecting, handling, possessing, selling, delivering, carrying, or transporting of the species, including import or export across State lines and international boundaries, except for properly documented antique specimens of these taxa at least 100 years old, as defined by section 10(h)(1) of the Act.

(2) Introduction of nonnative species that compete with or prey upon the 23 species, such as the introduction of competing, nonnative plants or animals to the State of Hawaii.

(3) The unauthorized release of biological control agents that attack any life stage of these 23 species.

(4) Unauthorized modification of the channel or water flow of any stream, or removal or destruction of emergent aquatic vegetation in any body of water in which the blackline, crimson, or oceanic Hawaiian damselfly is known to occur.

(5) Unauthorized discharge of chemicals or fill material into any waters in which the blackline, crimson, or oceanic Hawaiian damselfly is known to occur.

Questions regarding whether specific activities would constitute a violation of section 9 of the Act should be directed to the Pacific Islands Fish and Wildlife Office (see ADDRESSES). Requests for copies of the regulations concerning listed species and general inquiries regarding prohibitions and permits may be addressed to the U.S. Fish and Wildlife Service, Endangered Species Permits, Ecological Services, Eastside Federal Complex, 911 NE. 11th Avenue, Portland, OR 97232-4181 (telephone 503-231-6158; facsimile 503-231-6243).

The State of Hawaii's endangered species law (State of Hawaii 2009) is automatically invoked when a species is listed, and provides supplemental protection, including prohibiting take of these species and encouraging conservation by State government agencies. Further, the State may enter into agreements with Federal agencies to administer and manage any area required for the conservation, management, enhancement, or protection of endangered species (State of Hawaii 2009). Funds for these activities could be made available under section 6 of the Act (Cooperation with the States). Thus, Federal protection afforded to listed species is reinforced and supplemented by protection under State law.

Taxonomic Name Changes for Nine Plant Species Since Listing

In 1982, we listed *Euphorbia skottsbergii* var. *kalaeloana* (47 FR

36846; August 24, 1982) as endangered following the taxonomy of Sherff (1936), although in 1959, Degener and Degener had moved this species to *Chamaesyce* (*Chamaesyce skottsbergii* var. *kalaeloana*). In both publications, the range for this species included only the "Ewa Plains of Oahu, Hawaii, in the vicinity of Barber's Point" (also known as Kalaeloa). In 1990, Koutnik (p. 615) placed *Chamaesyce skottsbergii* var. *kalaeloana* in synonymy with *C. skottsbergii* var. *skottsbergii*. According to Koutnik, the range for *C. skottsbergii* var. *skottsbergii* included southwestern Oahu (the Ewa Plains) and northwestern Molokai. However, in 2005, based on genetic analysis, Morden and Gregoritz (2005, p. 969) found that the Oahu and Molokai populations of *C. skottsbergii* var. *skottsbergii* are genetically distinct, and they supported the recognition of these two populations as distinct varieties. The authors suggested that the variety on Molokai should be recognized by the previously used variety name, *C. skottsbergii* var. *audens*. The scientific community and the Service currently accept Morden and Gregoritz's taxonomic clarification of *C. skottsbergii* var. *skottsbergii*, the range of which includes only southwestern Oahu, and *C. skottsbergii* var. *audens*, the range of which includes only Molokai.

We are aware of Steinman and Porter's 2002 (p. 473) molecular data for classification of Euphorbiaceae and the analysis of Bruyns *et al.* (2006, pp. 416-417), who found that *Chamaesyce* is nested among species of *Euphorbia*. Changing the names for the endangered Oahu plants *Chamaesyce celastroides* var. *kaenana*, *C. deppeana*, *C. herbstii*, *C. kuwaleana*, *C. rockii* and *C. skottsbergii* var. *skottsbergii* at 50 CFR 17.12 and at 50 CFR 17.99(j) would require a separate amendment to the CFR, not only for the Hawaiian species listings, but for all previously listed species nationwide. This amendment requires a separate notice and opportunity for public comment, and although we are unable to address this change in this final rule, we will initiate proposed taxonomic name changes for these five endangered plants in a future proposed rule.

At the time we listed *Alsinidendron obovatum* (56 FR 55770; October 29, 1991), *A. trinerve* (56 FR 55770; October 29, 1991), *Hedyotis coriacea* (57 FR 20772; May 15, 1992), *H. degeneri* (56 FR 55770; October 29, 1991), *H. parvula* (56 FR 55770; October 29, 1991), and *Lipochaeta tenuifolia* (56 FR 55770; October 29, 1991) as endangered, we followed the taxonomic treatment of Wagner *et al.* (1990, pp. 343, 501,

1,141–1,142, 1,148–1,150). Subsequently, Wagner *et al.* (2005, pp. 57–63) recognized and published new combinations (new genus and species names) for *Alsinidendron obovatum* (now *Schiedea obovata*) and *A. trinerve* (now *Schiedea trinervis*) based on phylogenetic analyses. These new combinations are currently accepted by the scientific community and by the Service. Terrell *et al.* (2005, pp. 832, 833) published new combinations for *Hedyotis coriacea* (now *Kadua coriacea*), *H. degeneri* (now *Kadua degeneri*), and includes *K. degeneri* var. *coprosmeifolia* and *K. degeneri* var. *degeneri*, and placed *Hedyotis parvula* in synonymy with *Kadua parvula*, an earlier and validly published name. Wagner and Robinson (2001, p. 554) recognized and published new

combinations for several Hawaiian species of *Lipochaeta*, including *Lipochaeta tenuifolia* (now *Melanthera tenuifolia*). At the time we listed *Phlegmariurus nutans* (59 FR 14482; March 28, 1994), we followed Ollgaard's *Index of the Lycopodiaceae* (1989, 135 pp.). Most recently, Palmer placed *Phlegmariurus nutans* in synonymy with *Huperzia nutans* (Palmer 2003, p. 257). We listed *Mariscus pennatiformis* (which included *M. pennatiformis* ssp. *bryanii* and *M. pennatiformis* ssp. *pennatiformis*) as endangered in 1994 (59 FR 56333) following the taxonomic treatment of Koyama (in Wagner *et al.* 1990, pp. 1,421–1,422). Since then, Strong and Wagner (1997, p. 39), and more recently Wagner and Herbst (2003, pp. 52–53), moved all Hawaiian species of *Mariscus* to *Cyperus*. The accepted

epithet for this species is *Cyperus pennatiformis* and includes *C. pennatiformis* var. *bryanii* and *C. pennatiformis* var. *pennatiformis*. The range of the species at the time of listing and now has not changed.

All of the aforementioned name changes are currently accepted by the scientific community, and, in accordance with the references cited above, we are revising the List of Endangered and Threatened Plants at 50 CFR 17.12 (see Table 3). In addition, we made editorial revisions to a limited number of units and species descriptions in 50 CFR 17.99(a)(1) and (b) (Kauai), 50 CFR 17.99(e)(1) and (f) (Maui), and 50 CFR 17.99(g) and (h) (Northwestern Hawaiian Islands) to adopt the taxonomic revisions.

TABLE 3—NAME CHANGES FOR 9 LISTED ENDANGERED HAWAIIAN PLANTS

Listing	Currently listed name	Accepted name change
56 FR 55770	<i>Alsinidendron obovatum</i>	<i>Schiedea obovata</i> .
56 FR 55770	<i>Alsinidendron trinerve</i>	<i>Schiedea trinervis</i> .
47 FR 36846	<i>Chamaesyce skottsbergii</i> var. <i>kalaeloana</i>	<i>Chamaesyce skottsbergii</i> var. <i>skottsbergii</i> .
57 FR 20772	<i>Hedyotis coriacea</i>	<i>Kadua coriacea</i> .
56 FR 55770	<i>Hedyotis degeneri</i>	<i>Kadua degeneri</i> .
56 FR 55770	<i>Hedyotis parvula</i>	<i>Kadua parvula</i> .
56 FR 55770	<i>Lipochaeta tenuifolia</i>	<i>Melanthera tenuifolia</i> .
59 FR 14482	<i>Phlegmariurus nutans</i>	<i>Huperzia nutans</i> .
59 FR 56333	<i>Mariscus pennatiformis</i>	<i>Cyperus pennatiformis</i> .

Critical Habitat

Background

Critical habitat is defined in section 3 of the Act as:

(i) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(I) Essential to the conservation of the species and

(II) Which may require special management considerations or protection; and

(ii) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided under the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management, such as research, census,

law enforcement, habitat acquisition and maintenance, propagation, live trapping, transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the prohibition against Federal agencies carrying out, funding, or authorizing the destruction or adverse modification of critical habitat. Section 7(a)(2) requires consultation on Federal actions that may affect critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public access to private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by the landowner. Where a landowner seeks or requests Federal agency funding or authorization that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would apply, but even in the event of a destruction or adverse modification finding, the Federal action

agency's and the applicant's obligation is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

For inclusion in a critical habitat designation, the habitat within the geographical area occupied by the species at the time of listing must contain physical or biological features essential to the conservation of the species, and be included only if those features may require special management considerations or protection. Critical habitat designations identify, to the extent known using the best scientific and commercial data available, habitat areas that provide for the necessary life cycle needs of the species (areas on which are found the physical or biological features essential for the conservation of the species). Under the Act and regulations at 50 CFR 424.12(e), we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed only when we determine that those areas are essential for the conservation of the species and that designation limited to those areas occupied at the time of listing would be

inadequate to ensure the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific and commercial data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the *Federal Register* on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines, provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas we should designate as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, or other unpublished materials and expert opinion or personal knowledge.

Habitat is often dynamic, and species may move from one area to another over time. Furthermore, we recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine to be necessary for the recovery of the species, as additional scientific information may become available in the future. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be required for recovery of the species.

The information currently available on the effects of global climate change and increasing temperatures does not make sufficiently precise estimates of the location and magnitude of the effects. We are currently not aware of any climate change information specific to the habitat of any of the species addressed in this rule that would indicate what areas may become important to the species in the future. Therefore, we were unable to determine what additional areas, if any, may be appropriate to include in the critical habitat designation for these species.

Areas that are important to the conservation of the species, but are outside the critical habitat designation, will continue to be subject to conservation actions we implement under section 7(a)(1) of the Act. These areas are also subject to the regulatory protections afforded by the section 7(a)(2) jeopardy standard, as determined on the basis of the best available scientific information at the time of the agency action. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), section 7 consultations, or other species conservation planning efforts if new information available to these planning efforts calls for a different outcome.

Prudency Determination for 25 Oahu Species

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. Our regulations at 50 CFR 424.12(a)(1) state that designation of critical habitat is not prudent when one or both of the following situations exist: (1) The species is threatened by taking or other activity, and the identification of critical habitat can be expected to increase the degree of threat to the species; or (2) the designation of critical habitat would not be beneficial to the species.

As we have discussed under the Factor B analysis, there is currently no documentation that the 23 species listed in this rule are threatened by taking or other human activity. At the time we listed the plant *Achyranthes splendens* var. *rotundata* as endangered, we found that designation of critical habitat was not prudent because this plant was threatened by taking for lei-making, and the publication of critical habitat descriptions would make this plant more vulnerable (51 FR 10518; March 26, 1986). However, we have examined the best available information, and found no information to indicate that this plant is currently threatened by overcollection for lei-making, or is otherwise used for commercial, recreational, scientific, or educational purposes. Moreover, we have no information to indicate that

identification of critical habitat is expected to initiate such a threat to any of the species addressed in this final rule. Accordingly, this designation will provide information to individuals, local and State governments, and other entities engaged in activities or long-range planning in areas essential to the conservation of these species. Conservation of these species and their essential habitat will require habitat management, protection, and restoration, which will be facilitated by knowledge of habitat locations and the physical or biological features of the habitat. Other potential benefits include: (1) Triggering consultation under section 7 of the Act in new areas for actions with a Federal nexus where it would not otherwise occur; (2) focusing conservation activities on the most essential features and areas; and (3) preventing individuals from causing inadvertent harm to the species. Based on this information, we believe critical habitat will be beneficial, and have determined the designation of critical habitat is prudent for each of the species addressed in this final rule.

The primary regulatory effect of critical habitat is the section 7(a)(2) requirement that Federal agencies refrain from taking any action that destroys or adversely modifies critical habitat. We find that the designation of critical habitat for each of the 23 species listed in this final rule and the endangered plants *Achyranthes splendens* var. *rotundata* and *Chamaesyce skottsbergii* var. *skottsbergii* will benefit them by serving to focus conservation efforts on the restoration and maintenance of ecosystem functions that are essential for attaining their recovery and long-term viability. In addition, the designation of critical habitat serves to inform management and conservation decisions by identifying any additional physical or biological features of the ecosystem that may be essential for the conservation of certain species, such as the availability of sufficient instream flow for the blackline, crimson, and oceanic Hawaiian damselflies, or specific host plants such as *Nestegis sandwicensis* and *Sapindus oahuensis* for *Korthalsella degeneri*. Therefore, because we have determined that the designation of critical habitat will not likely increase the degree of threat to the species, and may provide some measure of benefit, we find that designation of critical habitat is prudent for the following 25 species, as critical habitat will be beneficial and there is no evidence that the designation of critical habitat will result in an increased threat

by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

Civil Justice Reform—Executive Order 12988

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We have designated critical habitat in accordance with the provisions of the Act. This final rule uses standard property descriptions and identifies the features essential to the conservation of the species within the designated areas to assist the public in understanding the habitat needs of each of the 124 species considered in this rule.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). This rule does not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act (NEPA)

It is our position that, outside the jurisdiction of the Circuit Court of the United States for the Tenth Circuit, we do not need to prepare environmental analyses as defined by NEPA (42 U.S.C. 4321 et seq.) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the *Federal Register* on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations With Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments), and the Department of

the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes.

We have determined that there are no tribal lands that are essential for the conservation of the 124 Oahu species. Therefore, we have not designated critical habitat for any of the 124 species on tribal lands.

Energy Supply, Distribution, and Use—Executive Order 13211

On May 18, 2001, the President issued an Executive Order (E.O. 13211; Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) on regulations that significantly affect energy supply, distribution, and use. E.O. 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. This rule designating critical habitat for 124 species is not a significant regulatory action under E.O. 12866, and we do not expect it to significantly affect energy supplies, distribution, or use. Regarding the proposed solar development project in Oahu—Lowland Dry—Unit 10, we do not foresee a Federal nexus for the specific project proposal, and, therefore, the designation of critical habitat is not anticipated to impact that project. Regarding the additional solar development project in Oahu—Lowland Dry—Unit 11, we support the development of a balanced conservation plan or State habitat conservation plan, which the Navy requires as a deed transfer restriction, in order to complete the proposed land transfer to the State of Hawaii. Further, we support the balanced approach planned by the Navy and the State that will allow the solar project to go forward in a portion of Oahu—Lowland Dry—Unit 11, as well as the conservation of *Chamaesyce skottsbergii* var. *skottsbergii* on the site. Therefore, since this designation of critical habitat is not anticipated to impact any of the proposed renewable energy projects, this action is not a significant energy action, and no Statement of Energy Effects is required.

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

- (a) Be logically organized;
- (b) Use the active voice to address readers directly;
- (c) Use clear language rather than jargon;
- (d) Be divided into short sections and sentences; and
- (e) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in the ADDRESSES section. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

References Cited

A complete list of all references cited in this rulemaking is available on the <http://www.regulations.gov> and upon request from the Pacific Islands Fish and Wildlife Office (see ADDRESSES).

Authors

The primary authors of this rulemaking are staff members of the Pacific Island Fish and Wildlife Office (see ADDRESSES).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Regulation Promulgation

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

- 1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

- 2. Amend § 17.11(h), the List of Endangered and Threatened Wildlife by adding entries for “Damselfly, blackline Hawaiian”, “Damselfly, crimson Hawaiian”, and “Damselfly, oceanic Hawaiian”, in alphabetical order under INSECTS, to read as follows:

§ 17.11 Endangered and threatened wildlife.

(h) * * *

* * * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
INSECTS							
Damselfly, blackline Hawaiian.	<i>Megalagrion nigrohamatum nigrolineatum.</i>	U.S.A. (HI)	NA	E	.....	17.95(I)	NA
Damselfly, crimson Hawaiian.	<i>Megalagrion leptodemas.</i>	U.S.A. (HI)	NA	E	.....	17.95(I)	NA
Damselfly, oceanic Hawaiian.	<i>Megalagrion oceanicum</i>	U.S.A. (HI)	NA	E	.....	17.95(I)	NA

■ 3. Amend § 17.12(h), the List of Endangered and Threatened Plants, as follows:

■ a. By removing the entries for *Alsinidendron obovatum*, *Alsinidendron trinerve*, *Chamaesyce skottsbergii* var. *kalaeloana*, *Hedyotis coriacea*, *Hedyotis degeneri*, *Hedyotis parvula*, *Lipochaeta tenuifolia*, and *Mariscus pennatifolius* under FLOWERING PLANTS;

■ b. By revising the entry for *Achyranthes splendens* var. *rotundata* under FLOWERING PLANTS to read as set forth below;

■ c. By adding entries for *Bidens amplexans*, *Chamaesyce skottsbergii* var. *skottsbergii*, *Cyanea calycina*, *Cyanea lanceolata*, *Cyanea purpurellifolia*, *Cyperus pennatifolius*, *Cyrtandra gracilis*, *Cyrtandra kaulantha*, *Cyrtandra sessilis*, *Cyrtandra waiolani*, *Kadua coriacea*, *Kadua degeneri*, *Kadua parvula*, *Korthalsella degeneri*, *Melanthera tenuifolia*, *Melicope christophersenii*, *Melicope hiiakae*, *Melicope makahae*, *Platydesma cornuta* var. *cornuta*, *Platydesma cornuta* var. *decurrens*, *Pleomele forbesii*, *Psychotria hexandra* ssp. *oahuensis*, *Pteralyxia macrocarpa*,

Schiedea obovata, *Schiedea trinervis*, *Tetraplasandra lydgatei*, and *Zanthoxylum oahuense* in alphabetical order under FLOWERING PLANTS to read as set forth below;

■ d. By removing the entry for *Phlegmariurus nutans* under FERNS AND ALLIES; and

■ e. By adding entries for *Doryopteris takeuchii* and *Huperzia nutans* in alphabetical order under FERNS AND ALLIES to read as set forth below.

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
FLOWERING PLANTS							
<i>Achyranthes splendens</i> var. <i>rotundata</i> .	Round-leaved chaff flower.	U.S.A. (HI)	Amaranthaceae	E	220	17.99(i)	NA
<i>Bidens amplexans</i> ..	Kookoolau	U.S.A. (HI)	Asteraceae	E	806	17.99(i)	NA
<i>Chamaesyce skottsbergii</i> var. <i>skottsbergii</i> .	Ewa plains akoko	U.S.A. (HI)	Euphorbiaceae	E	120	17.99(i)	NA
<i>Cyanea calycina</i>	Haha	U.S.A. (HI)	Campanulaceae	E	806	17.99(i)	NA
<i>Cyanea lanceolata</i> ...	Haha	U.S.A. (HI)	Campanulaceae	E	806	17.99(i)	NA
<i>Cyanea purpurellifolia</i> .	Haha	U.S.A. (HI)	Campanulaceae	E	806	17.99(i)	NA

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
<i>Cyperus pennatiformis</i> .	None	U.S.A. (HI)	Cyperaceae	E	559	17.99(a)(1), (e)(1), (g), and (l)	NA
<i>Cyrtandra gracilis</i>	Haiwale	U.S.A. (HI)	Gesneriaceae	E	806	17.99(i)	NA
<i>Cyrtandra kaulantha</i>	Haiwale	U.S.A. (HI)	Gesneriaceae	E	806	17.99(i)	NA
<i>Cyrtandra sessilis</i>	Haiwale	U.S.A. (HI)	Gesneriaceae	E	806	17.99(i)	NA
<i>Cyrtandra waiolani</i> ...	Haiwale	U.S.A. (HI)	Gesneriaceae	E	806	17.99(i)	NA
<i>Kadua coriacea</i>	Kioele	U.S.A. (HI)	Rubiaceae	E	467	17.99(e)(1) and (l)	NA
<i>Kadua degeneri</i>	None	U.S.A. (HI)	Rubiaceae	E	448	17.99(i)	NA
<i>Kadua parvula</i>	None	U.S.A. (HI)	Rubiaceae	E	448	17.99(i)	NA
<i>Korthalsella degeneri</i>	Hulumoa	U.S.A. (HI)	Viscaceae	E	806	17.99(i)	NA
<i>Melanthera tenuifolia</i>	Nehe	U.S.A. (HI)	Asteraceae	E	448	17.99(i)	NA
<i>Melicope christophersenii</i> .	Alani	U.S.A. (HI)	Rutaceae	E	806	17.99(i)	NA
<i>Melicope hiiakae</i>	Alani	U.S.A. (HI)	Rutaceae	E	806	17.99(i)	NA
<i>Melicope makahae</i> ..	Alani	U.S.A. (HI)	Rutaceae	E	806	17.99(i)	NA
<i>Platydesma comuta</i> var. <i>comuta</i> .	None	U.S.A. (HI)	Rutaceae	E	806	17.99(i)	NA
<i>Platydesma comuta</i> var. <i>decurrens</i> .	None	U.S.A. (HI)	Rutaceae	E	806	17.99(i)	NA
<i>Pleomele forbesii</i>	Hala pepe	U.S.A. (HI)	Asparagaceae	E	806	17.99(i)	NA
<i>Psychotria hexandra</i> ssp. <i>oahuensis</i> .	Kopiko	U.S.A. (HI)	Rubiaceae	E	806	17.99(i)	NA
<i>Pteralyxia macrocarpa</i> .	Kaulu	U.S.A. (HI)	Apocynaceae	E	806	17.99(i)	NA
<i>Schiedea obovata</i>	None	U.S.A. (HI)	Caryophyllaceae	E	448	17.99(i)	NA
<i>Schiedea trinervis</i>	None	U.S.A. (HI)	Caryophyllaceae	E	448	17.99(i)	NA
<i>Tetraplasandra lydgatel</i> .	None	U.S.A. (HI)	Araliaceae	E	806	17.99(i)	NA
<i>Zanthoxylum oahuense</i> .	Ae	U.S.A. (HI)	Rutaceae	E	806	17.99(i)	NA

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
FERNS AND ALLIES							
<i>Doryopteris takeuchii</i>	None	U.S.A. (HI)	Pteridaceae	E	806	17.99(i)	NA
<i>Huperzia nutans</i>	Wawaelole	U.S.A. (HI)	Lycopodiaceae	E	467	17.99(e)(1) and (i)	NA

■ 4. Amend § 17.95(i), by adding critical habitat for "Blackline Hawaiian Damselfly (*Megalagrion nigrohamatum nigrolineatum*)," "Crimson Hawaiian Damselfly (*Megalagrion leptodemas*)," and "Oceanic Hawaiian Damselfly (*Megalagrion oceanicum*)", in the same alphabetical order as these species occur in the table at § 17.11(h), to read as set forth below.

§ 17.95 Critical habitat—fish and wildlife.

* * * * *

(i) *Insects.*

* * * * *

Blackline Hawaiian Damselfly (*Megalagrion nigrohamatum nigrolineatum*)

(1) Critical habitat units are depicted for Honolulu County, Hawaii, on the maps below.

(2) *Primary constituent elements.* The primary constituent elements of critical habitat for the blackline Hawaiian damselfly (*Megalagrion nigrohamatum nigrolineatum*) are:

(i) Elevation: Less than 3,300 ft (1,000 m).

(ii) Annual precipitation: Greater than 75 in (190 cm).

(iii) Substrate: Clays; ashbeds; deep, well-drained soils; lowland bogs.

(iv) Canopy: *Antidesma*, *Metrosideros*, *Myrsine*, *Pisonia*, *Psychotria*.

(v) Subcanopy: *Cibotium*, *Claoxylon*, *Kadua*, *Melicope*.

(vi) Understory: *Alyxia*, *Cyrtandra*, *Dicranopteris*, *Diplazium*, *Machaerina*, *Microlepia*.

(vii) Perennial streams.

(viii) Slow reaches of streams.

(ix) Pools.

(3) Existing manmade features and structures, such as buildings, roads, railroads, airports, runways, other paved areas, lawns, and other urban landscaped areas, existing trails, campgrounds and their immediate surrounding landscaped area, scenic lookouts, remote helicopter landing sites, and existing fences are not included in the critical habitat designation. Federal actions limited to those areas, therefore, would not trigger

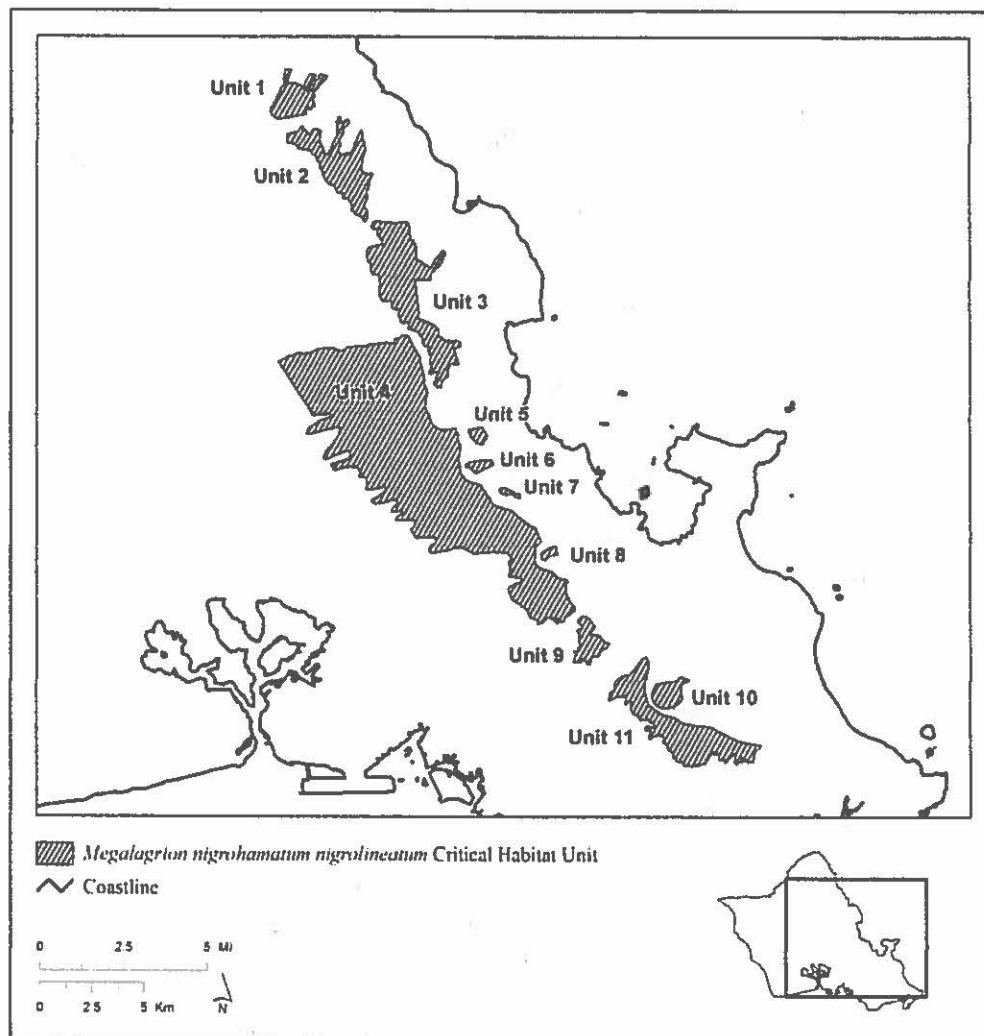
a consultation under section 7 of the Act unless they may affect the species or adjacent critical habitat.

(4) *Critical habitat maps.* Maps were created in GIS, with coordinates in UTM Zone 4, units in meters using North American datum of 1983 (NAD 83). The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's internet site, <http://www.fws.gov/pacificislands>; at <http://www.regulations.gov> at Docket No. FWS-R1-ES-2010-0043; and at the field office responsible for the designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) Index map of critical habitat units for the blackline Hawaiian damselfly (*Megalagrion nigrohamatum nigrolineatum*) follows:

BILLING CODE 4310-55-P

Map 1
Megalagrion nigrohamatum nigrolineatum—Index Map



nigrolineatum—Unit 3—Lowland Wet, Honolulu County, Hawaii (3,041 ac; 1,231 ha). These units are critical habitat for the blackline Hawaiian damselfly, *Megalagrion nigrohamatum nigrolineatum*. Map of *Megalagrion nigrohamatum nigrolineatum*—Unit 1—

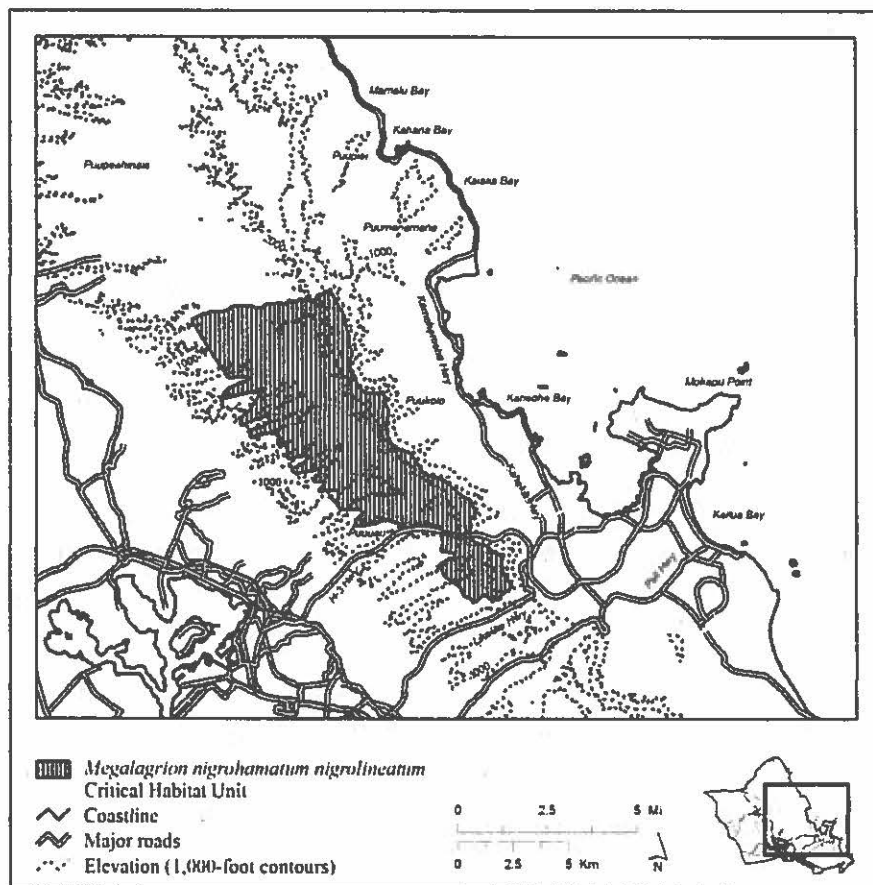
Lowland Wet, *Megalagrion nigrohamatum nigrolineatum*—Unit 2—
Lowland Wet, and *Megalagrion nigrohamatum nigrolineatum*—Unit 3—
Lowland Wet follows:

(7) *Megalagrion nigrohamatum nigrolineatum*—Unit 4—Lowland Wet, Honolulu County, Hawaii (15,728 ac;

6,365 ha). This unit is critical habitat for the blackline Hawaiian damselfly, *Megalagrion nigrohamatum*

nigrolineatum. Map of *Megalagrion nigrohamatum nigrolineatum*—Unit 4—Lowland Wet follows:

Megalagrion nigrohamatum nigrolineatum
Lowland Wet
Unit 4



negrolineatum—Unit 7—Lowland Wet, Honolulu County, Hawaii (53 ac; 21 ha). These units are critical habitat for the blackline Hawaiian damselfly, *Megalagrion nigrohamatum negrolineatum*. Map of *Megalagrion nigrohamatum negrolineatum*—Unit 5—

Lowland Wet, *Megalagrion nigrohamatum nigrolineatum*—Unit 6—
Lowland Wet, and *Megalagrion nigrohamatum nigrolineatum*—Unit 7—
Lowland Wet follows:

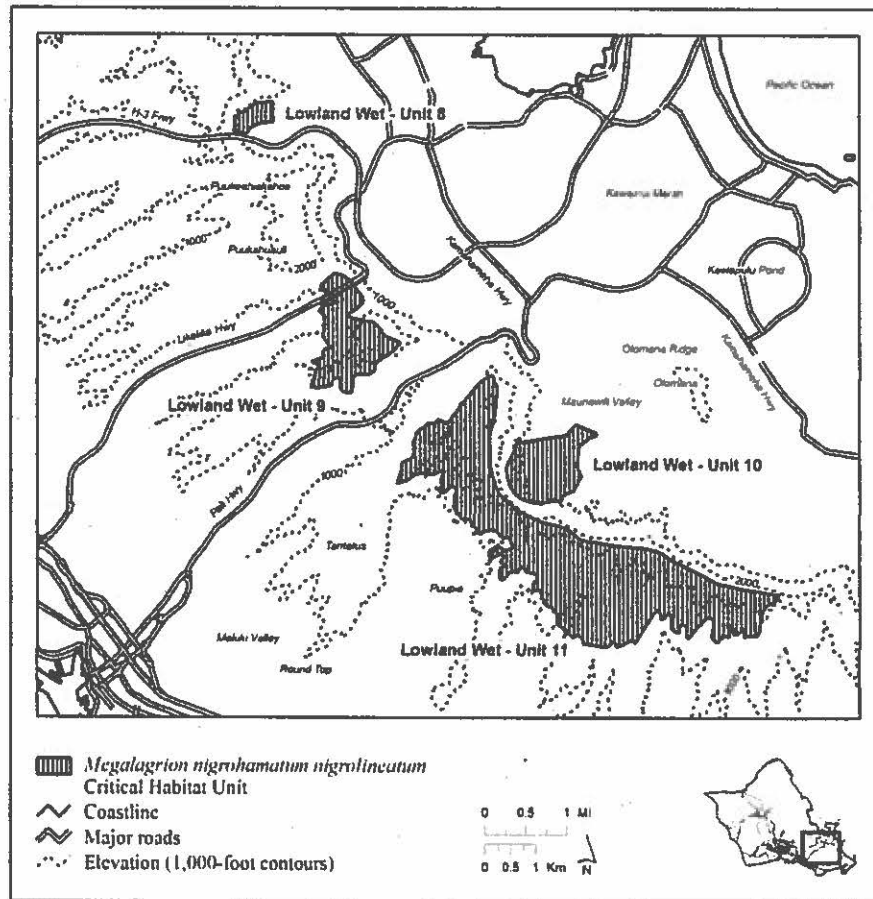
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(9) *Megalagrion nigrohamatum nigrolineatum*—Unit 8—Lowland Wet, Honolulu County, Hawaii (75 ac; 30 ha); *Megalagrion nigrohamatum nigrolineatum*—Unit 9—Lowland Wet, Honolulu County, Hawaii (478 ac; 193 ha); *Megalagrion nigrohamatum nigrolineatum*—Unit 10—Lowland Wet,

Honolulu County, Hawaii (407 ac; 165 ha); and *Megalagrion nigrohamatum nigrolineatum*—Unit 11—Lowland Wet, Honolulu County, Hawaii (2,507 ac; 1,014 ha). These units are critical habitat for the blackline Hawaiian damselfly, *Megalagrion nigrohamatum nigrolineatum*. Map of *Megalagrion*

nigrohamatum nigrolineatum—Unit 8—Lowland Wet, *Megalagrion nigrohamatum nigrolineatum*—Unit 9—Lowland Wet, *Megalagrion nigrohamatum nigrolineatum*—Unit 10—Lowland Wet, and *Megalagrion nigrohamatum nigrolineatum*—Unit 11—Lowland Wet follows:

Megalagrion nigrohamatum nigrolineatum
Lowland Wet
Unit 8, Unit 9, Unit 10 and Unit 11



BILLING CODE 4310-55-C

Crimson Hawaiian Damselfly
(*Megalagrion leptodemas*)

(1) Critical habitat units are depicted for Honolulu County, Hawaii, on the maps below.

(2) *Primary constituent elements.*

(i) In units 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11, the primary constituent elements of critical habitat for the crimson Hawaiian damselfly are:

(A) Elevation: Less than 3,300 ft (1,000 m).

(B) Annual precipitation: Greater than 75 in (190 cm).

(C) Substrate: Clays; ashbeds; deep, well-drained soils; lowland bogs.

(D) Canopy: *Antidesma*, *Metrosideros*, *Myrsine*, *Pisonia*, *Psychotria*.

(E) Subcanopy: *Cibotium*, *Claoxylon*, *Kadua*, *Melicope*.

(F) Understory: *Alyxia*, *Cyrtandra*, *Dicranopteris*, *Diplazium*, *Machaerina*, *Microlepia*.

(G) Perennial streams.

(H) Slow reaches of streams or ponds.

(ii) In units 12, 13, and 14, the primary constituent elements of critical habitat for the crimson Hawaiian damselfly are:

(A) Elevation: Unrestricted.

(B) Annual precipitation: Greater than 75 in (190 cm).

(C) Substrate: Greater than 65 degree slope, shallow soils, weathered lava.

(D) Canopy: None.

(E) Subcanopy: *Broussaisia*, *Cheirodendron*, *Leptecophylla*, *Metrosideros*.

(F) Understory: Ferns, Bryophytes, *Coprosma*, *Dubautia*, *Kadua*, *Peperomia*.

(G) Perennial streams.

(H) Slow reaches of streams or ponds.

(3) Existing manmade features and structures, such as buildings, roads, railroads, airports, runways, other paved areas, lawns, and other urban landscaped areas, existing trails, campgrounds and their immediate surrounding landscaped area, scenic lookouts, remote helicopter landing sites, and existing fences are not

EXHIBIT 11

JOHN L HIGHAM
44-048 KAIMALU PLACE
Kaneohe, Hawaii 967447
Telephone : 291-8380
E-mail : johnlhigham@gmail.com

OBJECTIVE : Pursue a challenging position in real estate development

EDUCATION : Radford High School, 1967
University of Hawaii, 1973, B.S. in Civil Engineering
Professional Civil Engineer, License # 4407
Computer Background - Excel, Word & Project

EXPERIENCE :

**August 2008
to
Nov-18**

Vice President, Construction & Engineering, Aina Nui Corporation
(Aina Nui Corporation is a subsidiary of the James Campbell Company)
- Responsible for the completion of all infrastructure engineering work.
- Responsible for the completion of all infrastructure construction work.

**September 2007
to
Jul-08**

Chief Operating Officer, Community Planning & Engineering, Inc.
- Responsible for the daily operations of the office including work assignments.
- Prepare work proposals, approve monthly invoices & prepare cash flow projections.

**January 2004
to
September 2007**

Chief Engineer, Waiawa Ridge Development, LLC
- Coordinated required revisions/updates to entitlements & master plans.
- In charge of planning and subdivisions.
- Responsible for overseeing completion of construction plans for infrastructure.

**August 1990
to
January 2004**

Director of Development - Amfac/JMB Hawaii, Honolulu, Hawaii
Kaanapali, Maui - August 1997 to January 2004
- In charge of completing design and construction of all infrastructure.
- Responsible for the demolition of Pioneer Mill and redevelopment of the site.
- In charge of the Kaanapali Water Company until it was sold.

Oahu Sugar Mill (Mill Town Center) - November 1994 to August 1997
- Coordinated original engineering and feasibility studies.
- Responsible for coordination of Construction Drawings.
- Responsible for construction of the Infrastructure.

Lihue Hanamaulu Master Plan, Kauai - January 1994 to August 1997
- Responsible for engineering feasibility studies for 550 acre master plan.
- Assisted in obtaining entitlements for the master plan.

Waialeale - August 1990 to August 1997
- Responsible for the design & construction of the main infrastructure.
- Responsible for the construction of an 18 hole golf course and clubhouse.
- Also responsible for coordinating all subdivisions for bulk sales.
- Monitored subdeveloper/builders for compliance with design guidelines.
(The golf course was completed in 1993, most infrastructure was completed by 1995)

**December 1988
to
July 1990**

Project Manager - Bedford Properties, Honolulu, Hawaii

(Bedford Properties purchased Kaiser Development Co. in Dec 1988)

Responsible for the development of the 193 lot Na Pali Haweo subdivision:

- Coordinated conceptual layout, feasibility analysis and project budget.
- Also responsible for construction drawings, construction and scheduling.
- Assisted in negotiating with Bishop Estate to obtain the leased fee interest.

Responsible for the development of a 130 Unit townhouse in Moanalua Valley:

- In charge of the original feasibility, acquisition, design, schedule and project budget.

Responsible for the development of the 104 unit Mawaena Kai Townhomes:

- Coordinated all aspects from initial conceptual plans, subdivisions, construction and sales. (The project was completed in 1990.)

**April 1979
to
December 1988**

Project Engineer - Kaiser Development Company, Honolulu, Hawaii

Assisted in the rezoning of approximately 100 acres of land in Hawaii Kai:

- Involved in coordinating conceptual plans, engineering feasibility studies, etc.
- worked with community groups and governmental agencies.

Responsible for the operation of the 260 acre Hawaii Kai Marina, including:

- In charge of daily operations & supervision of three Marina Patrolmen
- Completed the turnover of the marina to the adjacent homeowners in 1988.

Responsible for coordinating design & construction of the following:

- Sitework for a 63 lot single family subdivision.
- Master infrastructure (roads, reservoirs, marina walls, dredging etc).
- Sitework for the 61 lot Marina West single family subdivision.
- Sitework for the 10.0 acre Hawaii Kai Shopping Center.

**May 1973
to
April 1979**

Design Engineer, R. M. Towill Corp., Honolulu, Hawaii

Involved in a variety of projects including:

- Sitework design & construction for the Aloha Stadium.
- Design of a SPS and force main for Coconut Island.
- Various EA's, EIS's and Engineering Master Plans.
- Numerous ocean projects, current and wave studies, etc.

PERSONAL DATA :

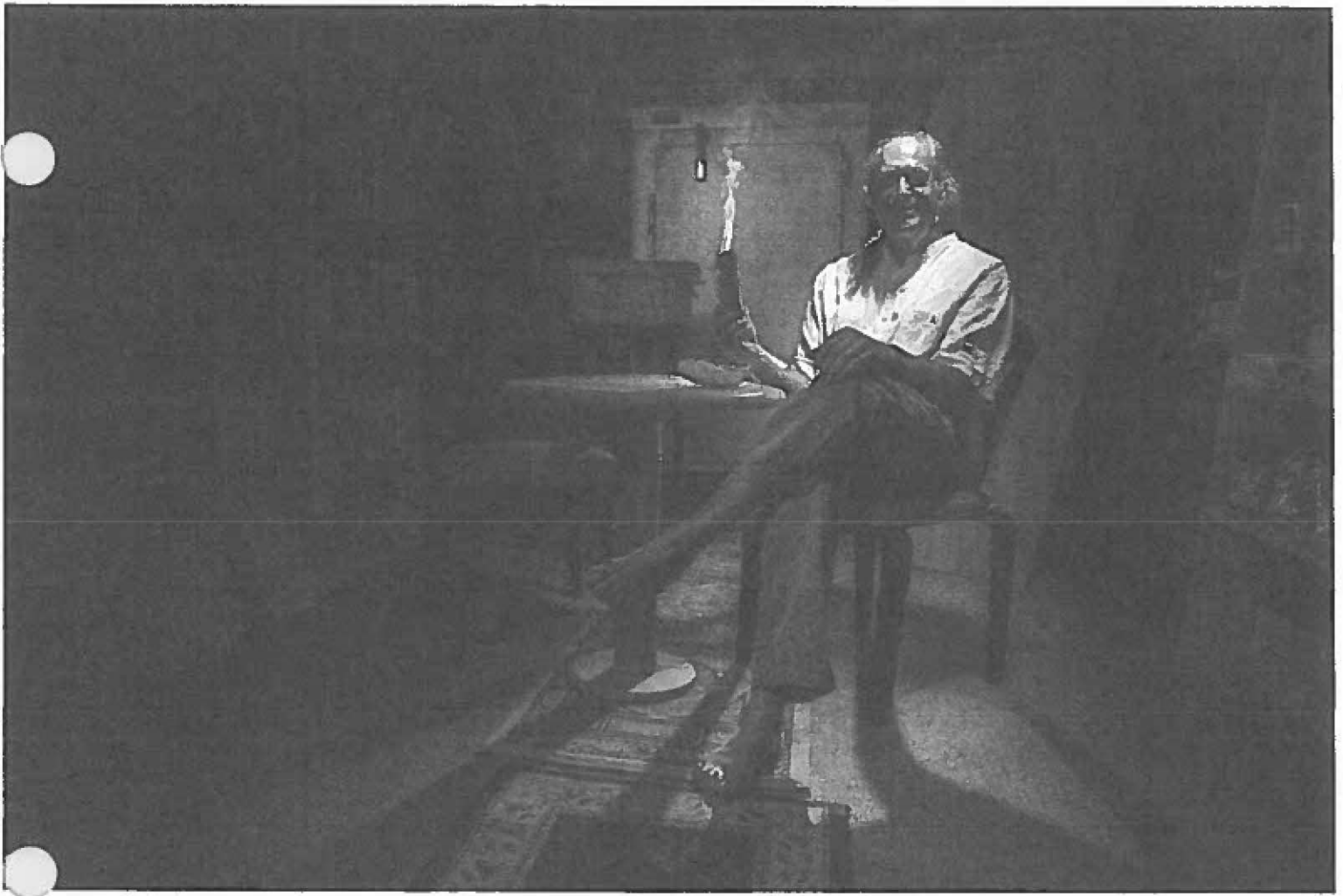
Married

50 year resident of Hawaii

Interests include sailing, biking, running & swimming

LCDR in Coast Guard Reserve (Retired)

EXHIBIT 12



ECONOMICS ([HTTPS://WWW.HAWAIBUSINESS.COM/CATEGORY/ECONOMICS/](https://www.hawaiibusiness.com/category/economics/)) , FINANCE
([HTTPS://WWW.HAWAIBUSINESS.COM/CATEGORY/FINANCE/](https://www.hawaiibusiness.com/category/finance/)) , LIFESTYLE
([HTTPS://WWW.HAWAIBUSINESS.COM/CATEGORY/LIFESTYLE/](https://www.hawaiibusiness.com/category/lifestyle/)) - OCTOBER 31, 2016

The Cost of Dying

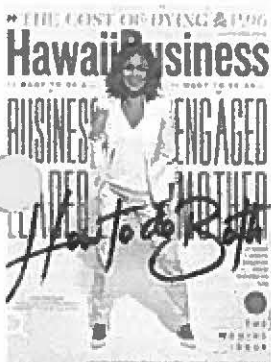


Marina Riker

There are many ways to memorize the dead, but one constant is that a little forethought and communication – before you go – can save your family a lot of money and grief after you're gone.

A few times a month, Billy Pa helps paddle an outrigger canoe about a quarter mile off Waikiki Beach.

Categories



That's where families and friends say goodbye to loved ones and scatter their ashes. "I think the reason people do it is because they have a love of the ocean," Pa says.

It's the general area where the ashes of Duke Kahanamoku, Don Ho and hundreds of other people have been left over the decades. Pa wants his ashes scattered there, too, and so does his wife.

Today, there are many ways to say goodbye to the departed, and lots of families are opting for alternatives to traditional funerals and burials. The reasons vary, including saving money or the environment, and memorializing a person in a unique way that seems appropriate to their lives. One thing that is true about all of these ways: A little planning while you're still here means fewer costs and less confusion for your family when you're gone, funeral directors and morticians say.

"Most people don't want to talk about it and certainly don't want to think about it. But, then, all of a sudden family members are emotional and grieving, and that's not the right time to make economic decisions," says Bodhi Be, a founder of the Death Store on Maui, a service of a nonprofit called Doorway Into Light.

CREMATION SAVES MONEY



Pat Newalu, a manager at Borthwick's, says nearly half of Borthwick's clients choose traditional funerals with burials, a much higher percentage than

The cheapest option is cremation, which can start at \$775 at a nonprofit provider like Oahu Mortuary. But once families get into traditional funerals and burials, the costs quickly add up, including

items such as the casket, flowers, prayer cards and extended ceremonies.

"They start nickel and diming the families," says Blanca Acevez Eberhardt, funeral services manager at Oahu Mortuary. "The calculator just keeps ticking."

Sometimes the total cost can soar past \$37,000, and that doesn't necessarily include the burial plot. Some funerals can even reach six figures.

At Oahu Mortuary, funeral services start at the low end of industry standards, around \$3,000. But that doesn't include the burial plot, which runs from \$10,000 to \$15,000 at Oahu Cemetery in Nuuanu, the oldest public cemetery in the state. Meanwhile, families may choose to pay less than \$2,400 for a plot at Homelani Memorial Park in Hilo, one of Hawaii's cheaper burial options.

At Borthwick Mortuary in Honolulu, the cost of cremation is \$3,300. Families must also take into account other details like the cost of transporting the body to the funeral home, which runs about \$745 at Borthwick. Additionally, they may opt for a hearse and limousine, costing over \$700 each. There's also other add-ons such as memorial books for \$225 and stationary starting at \$195.

Families can save money by pre-planning funeral arrangements with mortuaries or purchasing packages, says Pat Newalu, a manager at Borthwick. Nearly half of Borthwick's clients choose traditional funerals with burials, a much higher percentage than at other mortuaries, she says. And the vast majority of them have already started planning arrangements.

Newalu says Borthwick has been operating for 100 years, and has nurtured relationships with many local families who seek traditional burial services. But the company continues to adapt funeral packages to suit their clients' changing needs, for instance, by offering packages that include services like catering and floral arrangements.

"I think that we stand behind our services and our products," Newalu says. "It's really nice when we're able to help families."

Caskets can be costly: Most sold in the state range from \$1,900 to \$6,000, but some can go much higher; one offered by Ballard Family Moanalua Mortuary is priced at \$17,000. Biodegradable caskets made of materials such as pine, wicker and bamboo are cheaper and gaining in popularity. Categories

Only 17 percent of those surveyed nationwide had talked in-depth about their funeral wishes with family or friends, according to a 2015 report from the National Funeral Directors Association. "We don't see death as part of life, and there are all kinds of issues with that,"

says Be of Maui's Death Store.

The lack of planning places a burden on grief-stricken families, who don't know what their loved ones wanted, he says.

MAUI'S DEATH STORE

Be says he and others opened the Death Store in Haiku, Maui, with the hope of revolutionizing the funeral industry. He says he wants to transform the "business of dying" and re-create it as a "sacred service."

For instance, he says, the store also holds a monthly bereavement group, and works to start conversations about death and dying before someone passes away. He says he wants to be fully transparent about the funeral process so families can be as engaged as they wish. In fact, they can even help prepare the body if they want, he says.

"I like the family as included as they would like to be. If I had a graveyard, I would let them dig the hole."

Hospice providers agree that making arrangements as early as possible helps free families to process grief and ensure they're not spending money unnecessarily.

"There's a stigma with hospice that it's for the last few days, and nothing could be farther from the truth," says Michelle Bowerman, director of business operations at Islands Hospice. "There are so many services that getting on sooner helps the patient, helps the family. Waiting until the very, very last moment isn't the best idea."

Hospices can help people with bereavement counseling, funeral planning and difficult decisions such as what to do with the body, she says. Social workers can outline options that you may not have previously considered, such as donating the body to a medical school.

"You have to respect what each person wants. It's not for us to judge, or for us to change their mind," Bowerman says.

CHANGING TIMES

Michelle Bowerman, director of business operations at Islands Hospice, says hospices help families in many ways, including with bereavement counseling, funeral planning and difficult decisions, such as what to do with the body.
Photo by Olivier Koning

You know the traditional steps. First, a visitation ceremony at the mortuary, followed by a funeral service. Then, the body is taken to the cemetery, where family and friends says a few words before the body is lowered into the ground.

Once, that was what most families expected. Not anymore. Changing attitudes toward religion and environmentally conscious thinking are among the factors driving changes.

For instance, cremation, which is often cheaper than burial, is getting more popular. Hawaii has one of the highest cremation rates in the country with 73 percent of families choosing cremation; nationwide, less than 50 percent do, according to the National Funeral Directors Association. In Hawaii, the number of cremations grew about 10 percent since 2005, and that number is supposed to grow again to 85 percent by 2030, according to the organization.

Some say this trend is largely because of the high cost of burial, which can include fees for the plot, the casket, opening and closing the grave, grave liners and transportation to the cemetery.

At Ballard Family Mortuaries, a traditional funeral service – including the casket – can cost up to \$37,000, but that doesn't include viewing, visitation or any ceremonies at the funeral home. Yet cremation starts at only \$700. For an additional \$295, families can witness the cremation. Categories

"Our business model has always been built on cremation because we knew that's where the industry was going," says Mark Ballard, owner of Ballard Family Mortuaries. "We see a lot of people who are not having a traditional religious funeral service. It's more of a family kind of service, or no service at all."

Ballard grew up in Kentucky, where he was introduced to the death care industry at 11 years old. His neighbor owned a funeral home, but the man's children weren't interested in the trade. He took Ballard under his wing, and about a decade later, Ballard opened his first funeral home in Kentucky.

Years later, he sold his funeral homes on the Mainland and moved to Maui, where he opened his first Hawaii-based mortuary. When he opened it in the late 1990s, about 60 percent of his families opted for cremation. Now, about 75 percent do, he says.

At Oahu Mortuary, as many as 90 percent of families choose cremation, says Eberhardt.

Afterward, a popular practice is to scatter the ashes at sea, she says.

"Many of the tourists that come to do an ash scattering do it in Waikiki, but the local families go to the smaller beaches," Acevez says.

In 2008, president-elect Barack Obama said farewell to his grandmother, Madelyn Dunham, by scattering her ashes on the rocky shore near southeast Oahu's Lanai Lookout – the same place where he scattered his mother's ashes a decade earlier.



Bodhi Be of the Death Store. Photo by Chris Evans

Only 17 percent of Americans talk in-depth about their funeral wishes with family or friends.

Categories

GREEN BURIALS ONLY

Lisa Alo sits on a ledge in the floor of the Death Store, facing shelves filled with biodegradable urns. It's a small, dark space, tucked into the corner of a small shopping center in the lush Haiku area of Maui. The Maui store only offers "green" burials, selling handmade pine box and wicker caskets, which can be purchased starting at around \$500. The store doesn't use embalming fluid or other toxic chemicals for burials, she says. Scattering of ashes, though, is often more popular than burials among the Death Store's clients, she says. That's what she did with her sister's ashes.

More and more, Alo says, families are choosing to have funerals in their homes. Some consider a mortuary an unnecessary cost and find more closure with a memorial at home.

"It's not a business, it's life and death. As much as with birth you need a hospital, you don't need a mortuary with death," Alo says.

The nonprofit also caters to an unusual option chosen by a handful of people each year: ocean burial, Alo says. Environmental Protection Agency rules say a body can be buried at sea at least three miles from shore. If using a casket, it can't be made from plastic. The EPA also recommends that holes be drilled in the container, and that extra weights be added to offset the buoyancy of the body.

Be, one of the Death Store's founders, says this option would probably be chosen by more people if they knew about it.

"Some people have such a love for the ocean that they've either requested or would love to be buried in the ocean," Be said.

Another option is a biodegradable urn that helps birth a tree. It costs around \$150.

"Obviously the trend is towards something that environmentally makes sense," Be says. "No toxic chemicals, no embalming fluids and nothing expensive, yet simple."

Eventually, Be says, he hopes to create an environmentally friendly burial park. There could be trails, picnic areas and gardens, along with the cemetery, he says.

On the mainland, similar spaces are popping up. For instance, Prairie Creek Conservation Cemetery in Florida goes a step further, ensuring the land is legally protected from future development and non-biodegradable materials. Supporters say these cemeteries are a cheaper option for families that also limit pollution from chemicals

such as embalming fluid, while maintaining spaces for plants and wildlife.

Burial at the Florida conservation cemetery costs a one-time fee of \$2,000, plus the costs of getting the body to the burial site, says Freddie Johnson, director of the nonprofit Prairie Creek

Conservation Cemetery. He says the total cost of the transportation, services and burial usually end up around \$4,000.

"Even if our costs were higher, families would generally be saving money by not embalming, not paying for a vault and not paying for a fancy metal casket," he says.

Plus, some families are able to cut down costs by digging the grave, lowering the body and covering it themselves, he says. Many families often come back to visit the burial site, having picnics in the area, bird-watching or going hiking, he says.

"It's quite amazing to see how relaxed they get when they're out in nature, and how healing nature can be," Johnson says. "And, there's more involvement from the families, which can often bring healing in itself."

ASHES AT SEA

For over 25 years, Capt. Ken Middleton has helped families celebrate the lives of the departed, scattering their ashes onto the clear, blue waters surrounding Hawaii.

"We have folks from all around the world," Middleton says. His company, Hawaii Ash Scatterings, has helped hundreds of families say goodbye to their loved ones by holding memorials in the waves, just offshore of iconic places like Waikiki and Lahaina.

No state approval is needed for Hawaii residents to store or scatter ashes. He says ash scattering is becoming more popular and has mostly remained free from state and county regulation.

The state Health Department doesn't consider cremated remains a health hazard as long as they are scattered without creating a nuisance.

"It can be on the shoreline; we just ask that they do it discretely," says June Takushi of the Health Department. "They just have to make sure it's not over some kind of water reservoir."

The Hawaii Department of Land and Natural Resources says no permit is required to scatter ashes by land, sea or air, but they can't be scattered on state or federal property, which includes forest reserves and watersheds. Also, you should get permission from landowners before scattering ashes on private property, the agency

says.

However, the agency requires a permit for ash scattering ceremonies at sea that involve large crowds or multiple boats, and that permit needs to be acquired about two weeks before the ceremony. Plus, the

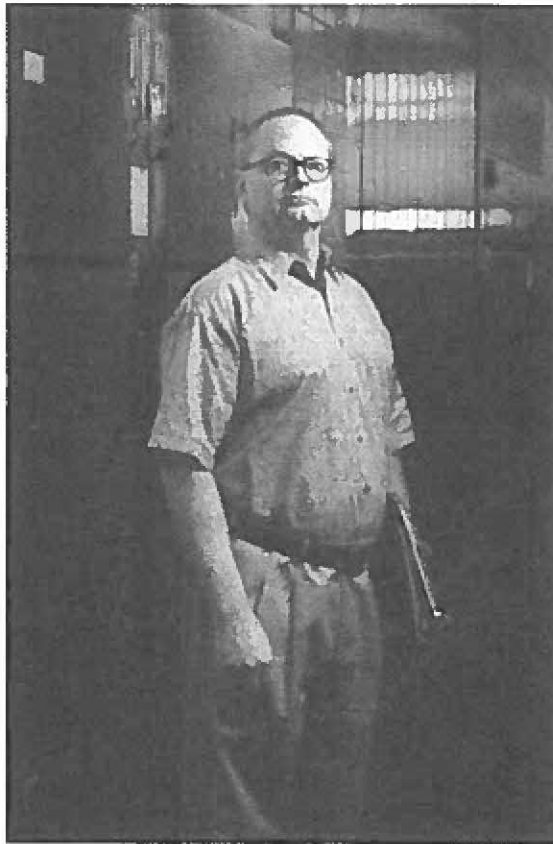
DLNR asks that families scatter loose flowers instead of lei, because sea creatures can get sick from eating string.

Past three miles offshore, ash scattering is regulated by the U.S. Environmental Protection Agency. The agency requires written notification of ash scattering within 30 days of the ceremony, which includes the name of the deceased and the location where the remains were scattered.

The EPA says natural flowers and wreaths can be scattered, but plastic or synthetic flowers aren't allowed because they don't easily break down in the ocean.

Photo: Honolulu Star-Advertiser

NO NEXT OF KIN?



John Burns, administrative officer at the Honolulu Medical Examiner's office, says some people's bodies remain unclaimed because the next of kin do not wish to claim the body or can't afford to. Photo by Olivier Koning

That's Very Sad, But Also Rare.

Categories

For Dina Llovd, diving is a part of daily life.



Until recently, Lloyd was a social worker at Islands Hospice, where she worked with dozens of Hawaii residents who were deemed terminally ill, helping them and their families to decide what happens in the final days and hours, and after they pass away.

For a few, there are no next of kin. Still other patients don't want their families and friends to know they're dying. In those cases, no one will grieve. Tearful friends and family will not plan a funeral service. They will not scatter their ashes.

"It's not always a money thing, so it seems," Lloyd says. "We've had many people who have said, 'I have these family members, but I haven't talked to them in 40 years and please don't call them.'"

In 2015, about 8,000 people died in Honolulu County, according to the county Medical Examiner's Office, and a tiny percentage went "unclaimed." Between May 2015 and May 2016, there were 46 bodies in "storage" in Honolulu County, which means the Medical Examiner's office accepts the remains because there's nowhere else for them to go, according to their office. The state must approve before they can be buried or cremated.

Of those few, only a small group go truly unidentified, says John Burns, administrative officer at the Honolulu Medical Examiner's office. After interviewing friends, family and coworkers and searching through medical and dental records, the medical examiner can almost always determine who the deceased is.

"It's a large community, but it's a small community in many ways, so you don't have that kind of a problem," Burns says.

Some remain unclaimed because the next of kin is on the Mainland or elsewhere, and the survivors do not wish to claim the body or can't afford to. After all, Hawaii is a mecca for tourists from around the world, and some choose to make a permanent home here. According to U.S. Census data, slightly more than half of people who live in Hawaii – including the military population – were born here.

"The nature of relations here is vague and very inclusive, and so Uncle Joe or Aunt Sue may just be a neighbor they had when they were kids and nothing else." —John Burns

More often, the deceased has next of kin who are local, but they are unwilling or unable to claim the body. Burns explains: "Most people

think that an unclaimed body is one where there is no next of kin. But, remember, next of kin here is a broad concept.

"The nature of relations here is vague and very inclusive, and so Uncle Joe or Aunt Sue may just be a neighbor they had when they were kids and nothing else," he says. "So it wouldn't be surprising at

all that when presented with a bill for a funeral," they are reluctant to claim the body.

At Islands Hospice, social workers will provide charity services to ensure no one is turned away in their final days, even if they can't pay.

"We get folks who can tend to become unclaimed, whether that's because of financial issues or their home or lack of home situation," Lloyd says. "We basically just meet people where they're at, so no matter their circumstances we look at the big picture and figure out what are their needs."

If someone is unclaimed, the state takes custody. The Hawaii Department of Human Services and counties work together with mortuaries to ensure such bodies are cremated or buried. The department's MedQuest Division will pay for the burial or cremation of someone whose family cannot afford it. Over 100 bodies were referred to the MedQuest program from the Honolulu Medical Examiner's Office during a 12-month period in 2015-16, according to the office.

Eberhardt of Oahu Mortuary says her mortuary is one of the few that participates in the program. The mortuary holds onto the ashes, "in case someone comes out of the woodwork years later and wants to claim them," she says.

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EXHIBIT 13



GOLFBOOK

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Pensacola Navy Base Shooting | Houston Officer Killed | Carol Spinney Has Died | Flu Season | Gin Ad |

A buried problem at country's top funeral home chain?

BY AIMEE PICCHI

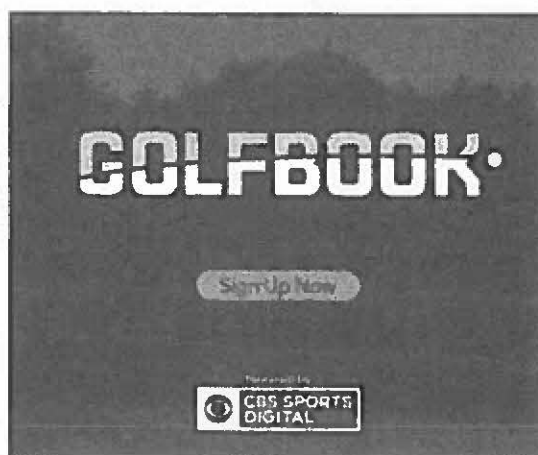
MARCH 6, 2017 / 2:23 PM / MONEYWATCH



BAD CLUCK

Bird flu forces Tyson Foods supplier in Tennessee to destroy 74,000 chickens

Families dealing with the death of a loved one are often struggling with a range of bereavement issues. The pain of getting overcharged by a funeral home may only add to their grief.



Rates and price disclosures from Service Corporation International, the country's largest funeral home chain, is coming under fire from a new report from the Funeral Consumers Alliance and Consumer Federation of America. Their survey found that median prices for basic funeral services are as much as 72 percent higher at SCI funeral homes, which often use the Dignity Memorial brand name, than at independent rivals.

The pricing disparities may not be obvious to consumers, however. The report says SCI's funeral homes fail to post product prices on their websites, which may make it more difficult for consumers to comparison shop for the best prices on cremations, burials and funerals. By law, funeral homes must disclose prices either over the telephone or in writing when customers visit their businesses, but they aren't required to post prices online, which the consumer advocacy groups say creates problems for consumers.



“One of the most critical ways families can control their costs is by shopping around, just as they would for any other product, but it’s difficult to do that for funerals,” said Josh Slocum, executive director of the Funeral Consumers Alliance. The federal rule “really needs to be updated to [make it] be possible for consumers using the internet” to shop and compare prices.

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The survey found SCI funeral homes charge a median of \$2,700 for a simple cremation, compared with \$1,562 for independent funeral homes. Burial services at SCI properties carry a median price of \$2,845, compared with \$1,893

for independent competitors. Full service funerals cost a median of \$7,705 at SCI funeral homes, compared with \$5,241 at independent rivals.

“We continuously look for ways to improve the customer experience and online resources are one way to do that,” the company said in a statement. “However, we strongly believe having a personal conversation to understand how families envision honoring their loved ones goes far beyond simply using an online resource and is the best way to help families during a very difficult time.”

It added, “We take the rights of client families, the Funeral Rule, and other industry regulations and requirements seriously.”

The findings are based on a survey of 35 SCI funeral homes and 103 independent funeral homes.

The company’s share priced dipped slightly Monday afternoon to about \$31 upon release of the consumer pricing study but shares still are trading near their 52-week high of \$32.21.

Funeral pricing often isn’t clear despite federal regulations on providing costs either over the telephone or in writing in person, according to a recent report from NPR. In one case, a widow said she relied on friends’ recommendations to use an SCI-owned funeral home called Hardage-Giddens Funeral Home. She paid almost \$3,300 for a cremation, or almost twice as much as the rates charged by competing funeral homes, NPR said.

A 2015 investigation by the Federal Trade Commission, which oversees the rule about price disclosures, found about one-quarter of funeral homes in six states failed to disclose pricing information to consumers.

The problems are heightened by the grief and distress that many families are suffering while also handling funeral services for their loved one who has died. Because of the stress, only about one in five consumers shop around for funeral services, even though the cost of a funeral or cremation can prove a significant expense for families.

Despite the disclosure rule, funeral prices haven't seen much pressure to remain low. Funeral expenses have outpaced inflation since the mid-1980s, according to NPR, which cited Labor Department data.

SCI shares have increased about 25 percent during the past year, compared with 19 percent for the S&P 500. In a March investor presentation, the company said it expects average annual growth in adjusted per-share earnings of as much as 12 percent. The company controls about 16 percent of the funeral home market in North America, while about 79 percent is represented by independent homes. The remaining 5 percent is controlled by other funeral home conglomerates.

Critics say SCI's share of the funeral home market place hasn't delivered benefits to consumers, at least on pricing.

"Its market share has grown significantly in the last decade" through acquisitions, said Stephen Brobeck, executive director of the Consumer Federation of America, on the conference call. "That would not be troubling if it utilized any economies of scale."

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EXHIBIT 14

Kenneth Middleton

Hawaii Ash Scatterings

796 Kalanipu'u Street

Honolulu, HI 96825

Toll-Free: 800-829-4899

Direct: 808-227-4956

captken@tradewindcharters.com

www.HawaiiAshScatterings.com

EDUCATION

Beaverton High School graduate in 1973. Oregon State University graduate in 1978 with BS in Forest Management.

EXPERIENCE

- Worked in OR and WA for private timber company and state as a forester from 1978 to 1985.
- Sailed to Honolulu with Ranger 29' sailing yacht
- Worked briefly as dive boat captain and divemaster for Aloha Dive Shop
- Charter fishing captain for ELO Sport Fishing
- Royal Prince dinner cruise ship captain
- Sailing yacht captain for Honolulu Sailing and Free Spirit Sailing Club.
- Started Tradewind Charters in 1986 and have been operating non-stop for 34 years. Currently own and operate a 49 passenger, 50' Power Catamaran, a 43' sailing yacht and a 40' sailing catamaran from Kewalo Harbor.

TRADEWIND CHARTERS

I started up Tradewind Charters, Inc. over 30 years ago to provide private yacht charter experiences to visitors and kamaaina. Memorial service cruises have always been part of our charter services at sea mix and has grown considerably over the past 20 years. Customers reach us through our websites, our relationships with past clients, funeral homes here and abroad, hospice care centers, and clergy throughout the state. 2019 we will perform over 600 ash scatterings/memorial services at sea statewide with 50% for local families and 50% for out of towners with some Hawaii connection.

