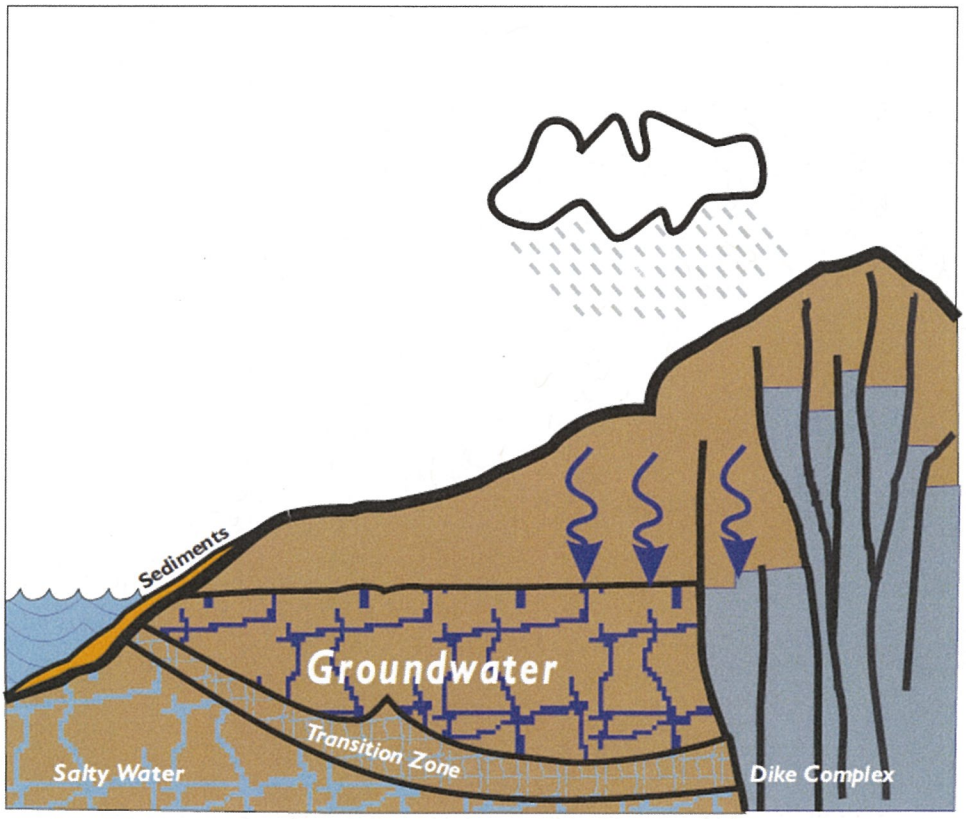
2018 Joint Government Water Conference

University of Hawaii – Campus Center Ballroom
Honolulu, Oahu
July 26, 2018

7:30am - 3:45pm

"Protecting Hawaii's Groundwater"



Sponsored by:

HAWAII STATE DEPARTMENT OF HEALTH

2018 - 4th Joint Government Water Conference
"Protecting Hawaii's Groundwater"
University of Hawaii Campus Center Ballroom, Honolulu, Oahu
Thursday, July 26, 2018 ~ 7:30 am - 3:45 pm

Drinking Water/Groundwater/Wastewater Professional(s):

The Department of Health (DOH) Environmental Health Administration (EHA) offices/branches (with the assistance of the University of Hawaii - Water Resources Research Center) invite you to register for the 4th Joint Government Water Conference. The Conference is intended to provide water industry personnel, government agencies, and other water-related organizations with an update of the groundwater protection strategies and activities being conducted in the State of Hawaii by the various DOH EHA offices/branches. In addition, we have invited several other water related agencies to give presentations on their activities and how it relates to or concerns our water systems and water-related activities. This conference will allow participants to keep abreast of the activities of the water-related government agencies, meet our staff and other water system personnel, ask questions and provide us with feedback, and learn what is in store for the drinking water/groundwater/wastewater industry in the coming years. We look forward to your attendance at our 4th Joint Government Water Conference.

Note: **You must pre-register for this conference by THURSDAY, July 19, 2018.** No registration on the date of the conference will be accepted. **Registration is limited** to 125. Priority will be given to people working professionally in water (groundwater, drinking water & wastewater) and government environmental protection personnel. A meal will be served as an integral part of the Conference.

Register On-line at:
http://events.egov.com/eventreg/HI/event.htm?name=4thjointgovernmentwaterconferenceoahu

TENTATIVE AGENDA (as of July 23, 2018)		
7:30am	Registration	
8:15am	*Opening Remarks and Introduction*	***Joanna Seto (DOH)***
8:30am	*SDWB: Groundwater Protection Strategy*	***Joanna Seto (DOH)***
9:00am	*WWB: Cesspool Strategy & Water Reuse*	***Sina Pruder (DOH)***
9:30am	*CWB: Polluted Runoff Program Strategy*	***Mike Burke (DOH)***
10:00am	Break	
10:30am	*HEER: Water Quality Activities*	***Fenix Grange (DOH)***
11:00am	*DOA-Pesticides-Pesticides in Groundwater*	***Adam Yamamoto (DOA)***
11:45am	*LUNCH: Lunch Speaker*	***Darren Lerner (UH Sea Grant/WRRC)***
	CONCURRENT SESSION A (Cesspool Workshop)	CONCURRENT SESSION B (Water Quality Workshop)
1:00pm	*Linking Land and Sea Through Collaborative Research to Inform Reef-to-Ridge Management* ***Jade Delevaux (UH)***	*Groundwater Status Report* ***Dan Chang (DOH)***
1:30pm	*Is Groundwater Pollution a Chronic Threat to Hawaii's Coastal Resources?* ***Daniel Amato (Element Environmental, LLC)***	*Importance of Watershed Protection to Groundwater - Part 1.* ***Katie Ersbak (DLNR)***
2:00pm	Break	
2:15pm	*Hydraulic and Geochemical Connectivity between Wastewater and Kaneohe Bay* ***Craig Glenn (UH)***	*Importance of Watershed Protection to Groundwater - Part 2.* ***Yumi Miyata, Waianae Mountains Watershed Partnership (WMWP)***
2:45pm	***Discussion:*** *Funding and Implementing Cesspool Upgrades – "up to 2050"*	***Discussion:*** *Interagency Coordination in Groundwater Protection; Water Education and Outreach Efforts*
3:30pm	Wrap-up	

For more information, contact the Safe Drinking Water Branch at 586-4258.

MORNING SESSION

HAWAII'S GROUNDWATER PROTECTION STRATEGY

Joanna L. Seto, P.E.
Safe Drinking Water Branch, Hawaii Department of Health

BIOGRAPHY

Joanna L. Seto, P.E., is the Engineering Program Manager of the Department of Health's Safe Drinking Water Branch. She has more than 25 years of combined private and public engineering experience working at Hawaiian Dredging & Construction Company, Sato & Associates, Inc., and the Department of Health, Clean Water Branch and Safe Drinking Water Branch. Joanna is currently the webmaster of the American Water Works Association-Hawaii Section. She was past president of the Hawaii Section of the American Society of Civil Engineers and is involved with Na Wahine Softball Club and as class representative for the `Iolani Bulletin. She graduated from `Iolani School and Washington University in St. Louis, Missouri where she earned a Bachelor of Science in Civil Engineering.

ABSTRACT

The Hawaii Department of Health (DOH) Groundwater Protection Strategy was finalized in June 2017. The Safe Drinking Water Branch will present the three goals of the strategy and the related objectives.

Goal 1: Monitor and assess groundwater quality.
Goal 2: Identify and prioritize groundwater contaminations threats.
Goal 3: Mitigate priority contamination threats and prevent contamination.

This strategy involves multiple DOH branches and offices (and potential funding sources): Safe Drinking Water Branch (GW106/DWSRF 15%), Wastewater Branch (CWSRF), Clean Water Branch (SW106), Solid & Hazardous Waste Branch (SHWB), Hazard Evaluation and Emergency Response Office (HEER).

Hawaii Groundwater Protection Strategy
Hawaii Department of Health Coordinating Branches/Offices:
Safe Drinking Water Branch *(GW106/DWSRF 15%)*, Wastewater Branch *(CWSRF)*, Clean Water Branch *(SW106)*, Solid & Hazardous Waste Branch *(SHWB)*, Hazard Evaluation and Emergency Response Office *(HEER)*
June 2017

Mission: To safeguard groundwater quality and public health by protecting Hawaii's groundwater from contamination. *(potential funding source listed within parentheses)*

Goal 1: ***Monitor and assess groundwater quality.*** *(GW106)*

Objective 1: Collect and analyze groundwater monitoring data with focus on priority threats to groundwater quality.
Objective 2: Work with other agencies that collect groundwater data to understand what data they collect and how it is collected.
Objective 3: Every four years, generate a Groundwater Status Report which provides a review, analysis, and summary of groundwater monitoring data to understand contaminant trends and sources of contamination. The Report shall include a list of proposed future monitoring of contaminants of concern with rationales and priorities based on severity of public health impacts.

Goal 2: ***Identify and prioritize groundwater contamination threats.***

Objective 1: Recognize that groundwater quality monitoring since the 1990s has shown that the priority threats to groundwater quality as determined by DOH and review of data are as follows *(GW106)*:

Priority Threats to Groundwater Quality - 2017
Onsite sewage disposal systems/cesspools/injection wells (WWB/CWB/SDWB)
Large scale use of recycled water (WWB/SDWB)
Large fuel storage facilities (SHWB/SDWB)
Increasing nitrate concentrations (WWB/CWB/SDWB)
Agricultural chemicals (HEER/SDWB)

Objective 2: Identify future threats to groundwater quality and prioritize for Goal 1 or Goal 3 follow-up *(GW106/CWSRF/SW106/319/HEER/SHWB)*.

Goal 3: ***Mitigate priority contamination threats and prevent contamination.***

Objective 1: Coordinate protection efforts with other branches/offices/agencies:

- Safe Drinking Water Branch Underground Injection Control Program - issuing permits for discharges to wells
- Wastewater Branch - protection from onsite sewage disposal systems and cesspools
- Clean Water Branch - surface water protection that also protect groundwater
- Solid & Hazardous Waste Branch - leaking underground storage tanks, landfills, and other wastes that may contribute to groundwater contamination
- Hazard Evaluation and Emergency Response Office - toxicology and health impacts of groundwater contamination and use of hazardous chemicals and pesticides
- Environmental Planning Office - review of new development projects and their impacts to groundwater
- Department of Land and Natural Resources, Commission on Water Resource Management – water quality planning via the Hawaii Water Plan, Water Resources Protection Plan – Section 10, Water Use Permits, Well-drilling applications, salt-water intrusion data
- Department of Agriculture – pesticide use and application

Objective 2: Coordinate use of funding sources to support the HIGWPS: Safe Drinking Water Branch (GW106/DWSRF 15%/DWSRF Fees), Wastewater Branch (CWSRF), Clean Water Branch (SW106, 319), Solid & Hazardous Waste Branch (SHWB), Hazard Evaluation and Emergency Response Office (HEER)
Objective 3: Coordinate the regulatory framework used by each branch/office/agency to protect groundwater from the prioritized contamination threats (e.g., Code of Federal Regulations, Hawaii Revised Statutes, Hawaii Administrative Rules, EPA Guidelines and online tools).

HAWAII'S CESSPOOL STRATEGY and WATER REUSE

Sina Pruder, P.E.
Wastewater Branch, Hawaii Department of Health

BIOGRAPHY

Sina Pruder received her engineering degree from the University of Hawaii. She also has her professional engineering license in civil engineering. She has worked in the Wastewater Branch for 24 years, where she is currently the Branch Chief. Wastewater Branch is responsible for regulating onsite wastewater systems (including cesspools) and water reuse in the State of Hawaii.

ABSTRACT

This presentation will cover cesspool and water reuse activities in the state of Hawaii. Topics include: New requirements on cesspools and mandatory upgrades by 2050, available income tax credits for cesspool upgrades, cesspool upgrade prioritization legislative report and the cesspool conversion working group required by Act 132 of 2018. The work group was established to develop a long-range, comprehensive plan for cesspool conversion statewide of all cesspools by 2050.

Recycled water usage statewide, trends and challenges, and update of the Water Reuse Task Force authorized by House Concurrent Resolution 86 D1 of 2018 to identify barriers and solutions to expand water reuse in Hawaii. Recent findings have raised concerns about the long-term security of fresh water in Hawaii, and increasing the amount of water reuse in the State will help alleviate pressure on fresh water drinking supplies.

CWB: POLLUTED RUNOFF PROGRAM STRATEGY

Michael T. Burke
Clean Water Branch – Polluted Runoff Control Program
Hawaii Department of Health

BIOGRAPHY

Michael T. Burke is the Program Specialist of the Department of Health's Clean Water Branch, Polluted Runoff Control (PRC) Program. He has been with PRC for almost ten years and supervisor for the past three. Prior to joining PRC, he worked at the Department of the Attorney General, Pomaré, Inc. (Hilo Hattie's corporate office), and Hoku Scientific, Inc. where he developed extensive contracting, project management, and procurement experience. Mike grew up in Wai'anae (and still considers his parents' house "home") and graduated from Hawaii Baptist Academy. He earned a Bachelor of Arts in Political Science from Loyola Marymount University and earned a Juris Doctor from Loyola Law School, in Los Angeles, California.

ABSTRACT

The PRC Program's mission is "to protect and improve the quality Hawai'i's water resources by preventing and reducing nonpoint source pollution." The PRC achieves its mission by administering the U.S. Environmental Protection Agency's Clean Water Act Section 319(h) Nonpoint Source Management Program, which provides federal grants to support the PRC and fund implementation projects that improve water quality in watersheds throughout the State. This presentation will highlight some of the PRC's implementation projects, and outline funding opportunities and challenges for potential partners.

HEER: WATER QUALITY ACTIVITIES

Fenix Grange
Hazard Evaluation and Emergency Response Office
Hawaii Department of Health

BIOGRAPHY

Fenix Grange, M.S. is the Program Manager for the Department of Health's Hazard Evaluation and Emergency Response Office. Trained an environmental toxicologist, Fenix has 18 years of combined environmental regulatory experience in Superfund as well as human and ecological toxic chemical exposure assessments. Working for the Oregon Department of Environmental Quality, she was one of two state co-managers for the Portland Harbor Superfund Site, acting as the primary tribal engagement coordinator, and initiated statewide implementation of innovative pesticide stewardship partnerships between farmers, university extension and regulators to effectively reduce off-target water quality impacts of pesticides while protecting crop quality. She was promoted to a senior science position to integrate toxic chemical hazard assessments across environmental programs. She came to HDOH in 2012 as the Supervisor of the HEER Site Discovery, Assessment and Remediation Section, and became Program Manager in 2016. In addition to overseeing Superfund and state cleanups of contaminated properties, HEER routinely provides technical and scientific support to other programs, state and local agencies on assessment and evaluation of environmental hazards.

ABSTRACT

In response to growing community concerns about possible offsite impacts of currently used pesticides on local communities and ecosystems, Hawaii's Departments of Health and Agriculture used agency special funds to design and implement a pilot study to sample surface waters and sediments state wide. We are sharing the results of the draft study with community and government stakeholders statewide so that we can begin to work together to learn more about the occurrence of currently used pesticides in non-target environments.

HAWAII DEPARTMENT OF AGRICULTURE -PESTICIDES

Adam Yamamoto
Pesticides Branch, Hawaii Department of Agriculture

BIOGRAPHY

Adam Yamamoto is one of two Environmental Health Specialists for the State of Hawai'i's Department of Agriculture, Pesticides Branch, Education section based on the island of Oahu. New to the Department of Agriculture, he is eager to broaden his knowledge and skills. His duties currently include proctoring exams, issuing licenses, and answering questions relating to pesticides in Hawaii. Adam earned a BA in biology from the University of Hawai'i at Manoa.

ABSTRACT

The Hawaii Department of Agriculture oversees major regulations affecting pesticide use In Hawaii. Activities include regulating the manufacture, sale, and use of pesticides in the State of Hawaii and regulating the distribution and use of pesticides to ensure safety and availability of important pesticides.

LUNCH SPEAKER

UNIVERSITY OF HAWAII – WATER RESOURCES RESEACH CENTER
Darren Lerner, Interim Director

BIOGRAPHY

Darren T. Lerner is currently the Director of the University of Hawaii's Sea Grant College Program and the Interim Director of the University of Hawaii's Water Resources Research Center (WRRC). He received his Ph.D. in Organismic and Evolution Biology from the University of Massachusetts. His interests include environmental physiology; cell and molecular physiology; organismal biology and comparative endocrinology.

ABSTRACT

WRRC has a long and impressive history of utilizing research to address issues related to water demand and water quality critical to the state and the Pacific region. A diverse team of scholars and scientists are involved in research-related collaborations and partnerships with the academic community; state, federal, and local agencies, as well as with the general public.

CONCURRENT SESSION A

LINKING LAND AND SEA THROUGH COLLABORATIVE RESEARCH TO INFORM RIDGE-TO-REEF MANAGEMENT

Jade M.S. Delevaux, University of Hawai'i at Manoa

BIOGRAPHY:

Jade Delevaux is an environmental scientist and researcher located in Honolulu, Hawai'i. She has been practicing environmental science since 2006 and her career has primarily focused on integrating land and sea processes to improve coastal water quality and resources in Australia, New Caledonia, Fiji, and Hawai'i. Jade obtained her bachelor degree in Geographical Sciences from the University of Queensland (Australia), her masters in Marine Biodiversity and Conservation from Scripps Institution of Oceanography at University of California San Diego, and completed her PhD in Natural Resources and Environmental Management at the University of Hawai'i. Areas of active research include developing scientific tools that can inform sustainability and conservation planning to sustain natural resources and foster coastal communities' resilience in Hawai'i and Fiji.

ABSTRACT:

Across Pacific Islands, declining natural resources, which are important food production systems for local communities, have contributed to a cultural renaissance of customary ridge-to-reef management approaches. To support these efforts, resource managers need an improved understanding of land-sea linkages and tools that can evaluate how terrestrial and marine drivers shape the condition of coral reefs. We established an interdisciplinary process to inform integrated land-sea management in Hawai'i in response to increasing coastal development, fishing, and climate change related impacts. We developed a modeling framework to link land and sea through groundwater flow. We identified coral reefs vulnerable to groundwater-based nutrients, and linked them to areas on land where appropriate management of human-derived nutrients could prevent increases in benthic algae and promote changes of coral recovery from bleaching. We applied our framework at opposite ends of the Hawaiian Archipelago, in Hā'ena and Ka'ūpūlehu, where local communities have applied customary resource management approaches through U.S. state government-recognized processes, with the goal of perpetuating traditional food systems and cultural practices. Our results demonstrate the value of interdisciplinary collaborations among researchers, resource managers and community members to develop placed-based solutions to local environmental threats. Our findings also show how culturally-grounded and inclusive research can guide management actions that foster the resilience of coral reefs. We discuss the lessons learned from our process and highlight the critical aspects of collaboration necessary to develop scientific tools that can inform practical and appropriate management actions.

IS GROUNDWATER POLLUTION A CHRONIC THREAT TO HAWAII'S COASTAL RESOURCES?

Daniel Amato, PhD., Element Environmental, LLC

BIOGRAPHY

Daniel Amato is a researcher and environmental scientist that explores the interaction between land-use, groundwater quality, and coastal ecosystems in the Pacific. Using a multi-discipline approach, Daniel's research in Hawaii and American Samoa aims to increase our understanding of the impacts of anthropogenic activities (including the disposal of wastewater) on nearshore ecosystems in oceanic islands. As a doctoral student at the University of Hawaii at Manoa (UHM), Daniel's research revealed an unprecedented level of connectivity between terrestrial sewage disposal systems and marine organisms at both large (island) and small scales (watershed) in Hawaii. As the project manager for a UHM study in American Samoa, Daniel is currently using a similar approach to characterize watershed dynamics across gradients of human impact. In addition to working with the U.S. Navy, Hawaii State, and Honolulu County on various stormwater related projects, Daniel has recently initiated a research study which is at the forefront of water quality science. In collaboration with the University of Hawaii, the non-profit The Surfrider Foundation, and local tech company Diagenetix, this project is testing the ability of a novel device (the BioRanger) to estimate the risk of swimming related illness using DNA level detection in near-real time.

ABSTRACT

Groundwater discharge to marine ecosystems is an often overlooked yet ubiquitous process that transports terrestrial contaminants to nearshore waters. Until recently, there has been little evidence of a substantial hydrologic connection between terrestrial wastewater systems and nearshore waters in Hawaii and many questions remain. This presentation will review recent studies that illustrate this connection and examine the impacts of terrestrial wastewater disposal on nearshore water quality and reef health in Hawaii.

HYDRAULIC AND GEOCHEMICAL CONNECTIVITY BETWEEN WASTEWATERS AND KANE'OHE BAY

Craig R. Glenn, Dept. of Geology and Geophysics, University of Hawaii at Manoa

BIOGRAPHY

Craig R. Glenn, Ph.D., is a Professor of Geology and Geophysics at University of Hawai'i at Mānoa and is a leading faculty researcher in the Marine and Environmental Geology Group. His research focuses on hydrologic, biogeochemical, and land-sea studies that trace water, nutrients, and pollutant fluxes from land-uses to groundwaters, as well as the connection of these waters to submarine groundwater discharge to the ocean. His recent studies include tracing these impacts throughout O'ahu, Maui, and West Hawai'i, and he is currently leading research efforts of onsite and injected wastewater disposal system impacts in the windward and north-shore regions of O'ahu. Professor Glenn is joined today by two of his current graduate students, Michael Mathioudakis and Daniel Dores, student researchers for UHM Hawai'i Sea Grant and the UHM Water Resources Research Center.

ABSTRACT

This presentation covers our multi-approaches to tracing onsite sewage disposal system (OSDS) contaminant transport between the Ko'olau Mountains and Kāne'ohe Bay, with emphasis on Kahalu'u, O'ahu, which is a HDOH cesspool upgrade Priority-1 location. We utilize thermal infrared imaging to locate coastal groundwater seeps, numerical groundwater modeling to simulate OSDS contaminant transport, and geochemical and stable isotopic source-tracking to understand OSDS impacts on groundwater, streams, and the coastal waters of Kāne'ohe Bay. Results establish discreet hydrologic connections between OSDS units and the Kahalu'u regional shallow groundwater, streams, and coastal waters of Kāne'ohe Bay as a function of OSDS density, proximity to the water table, and distance to surface and ocean waters.

DISCUSSION SESSION
HAWAII'S CESSPOOL STRATEGY – WHERE DO WE GO FROM HERE?
Funding and Implementing Cesspool Upgrades – "up to 2050"

- The Legislature has taken important actions to address Hawaii's cesspools, supported by DOH.
- Cesspools have significant impact on the quality of drinking water, general water quality, the health of our reefs, and the health of Hawaii's residents and visitors.
- Through federal regulation, the USEPA is already working with operators in the state to address large-capacity cesspools, and we must now focus on addressing smaller-scale domestic use of cesspools statewide.
- During Legislative session 2017, Act 125 was passed, requiring the replacement of all cesspools by 2050 and directing DOH to evaluate cesspools in the state, develop a prioritization method, and work with the Department of Taxation on possible funding options to reduce the financial burden on homeowners.
- The report identifies 14 areas in the state where an evaluation of data on hand indicates greatest need for action. As we gather more data in the future, the areas prioritized may change.
- During Legislative session 2018, Act 132 was passed to establish a Cesspool Conversion Working Group to develop a comprehensive plan for the conversion of all statewide cesspools by 2050.
- Act 132 identifies 14 tasks that need to be evaluated by the working group.
- Provides a $1M appropriation to retain the services of a consultant to assist the work group with the evaluation of these 14 specific task items.

Tasks required under Act 132 related to financing of cesspool upgrades

- Develop a long-range, comprehensive plan for cesspool conversion statewide of all cesspools by 2050, to be known as the cesspool conversion plan.
- Examine financing issues and the feasibility of various mechanisms, including grants, loans, tax credits, fees, special assessment districts, requirements for conversion at point of sale, and any other appropriate mechanisms for accomplishing and funding cesspool conversion, or any combination of these mechanism.
- Consider owners' ability to pay for cesspool conversions, and, especially how assistance can be provided for lower-income homeowners.
- Consider the most cost-effective approach to cesspool conversion.

CONCURRENT SESSION B

GROUNDWATER MONITORING STATUS REPORT

Daniel Chang
Safe Drinking Water Branch, Hawaii Department of Health

BIOGRAPHY

Daniel Chang is an Environmental Health Specialist with the Hawaii Department of Health's Safe Drinking Water Branch. He has over 30 years of experience in hazardous waste, groundwater and drinking water quality and protection programs. Mr. Chang received his Bachelors degree from the University of Hawaii at Manoa majoring in Chemistry. His duties and responsibilities at the Safe Drinking Water Branch includes: oversight/supervision of the Monitoring & Analyses Section and the Groundwater Protection Program. He also provides guidance/assistance to the Wellhead/Source Water Assessment and Protection Program.

ABSTRACT

As part of the Hawaii Groundwater Protection Strategy, the Groundwater Protection Program must prepare a Groundwater Monitoring Status Report every four (4) years.

Goal 1: Monitor and assess groundwater quality.

- Objective 3: Every four years, generate a Groundwater Status Report which provides a review, analysis, and summary of groundwater monitoring data to understand contamination trends and sources of contamination. The Report shall include a list of proposed future monitoring of contaminants of concern with rationale and priorities based on severity of public health impacts.

This presentation will provide an overview of the history of groundwater monitoring, summarize current monitoring projects, and propose future monitoring of potential contaminants of concern.

IMPORTANCE OF WATERSHED PROTECTION TO GROUNDWATER

Katie Ersbak
Division of Forestry and Wildlife, Hawaii Department of Land and Natural Resources

BIOGRAPHY

Katie Ersbak is a Watershed Planner with the State of Hawai'i, Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW). She has B.A. in Urban Studies and Planning from the University of California, San Diego and a Master's Degree in Urban and Regional Planning from the University of Hawai'i at Mānoa. Katie began her career at DLNR in 2011 with the Commission on Water Resource Management. Her experience working on fresh water issues helped set the stage for a position with DOFAW where she currently coordinates statewide protection efforts for Hawaii's native forests and mauka watersheds working closely with groups like the Watershed Partnerships. As the head of DOFAW's Watershed Partnerships Program, Katie administers funding to support the partnerships and other groups in their efforts to control ungulates, stop the spread of invasive weeds, build fences and engage with policy makers.

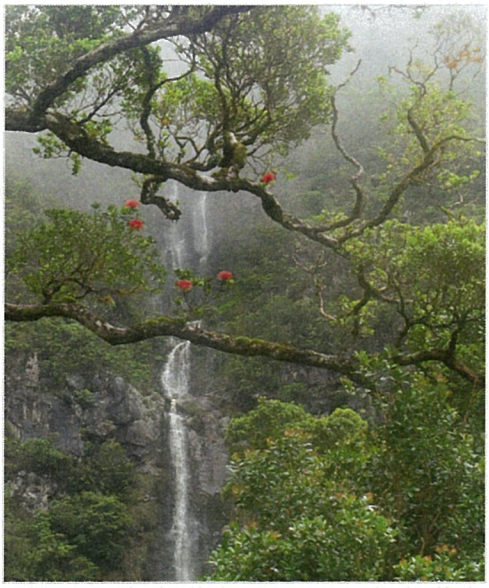
ABSTRACT

Hawaii's native forests absorb rain and cloud moisture across millions of acres - and are the source of Hawaii's fresh water. At the same time, they help reduce erosion that can impact water quality and damage coral reefs. For over a century, public-private partnerships have managed mauka forests by preventing the advance of invasive plants, animals and disease. This presentation will discuss the approaches to mauka watershed management in Hawai`i and the important role of the State's Division of Forestry and Wildlife and Watershed Partnerships in helping safeguard fresh water resources.

CO-PRESENTER

Yumi Kristin Miyata is the Coordinator/Operations Supervisor for the Wai'anae Mountains Watershed Partnership, formed on April 22, 2010 to protect, manage, and restore priority watershed areas within the Wai'anae Mountains important for water recharge, native species and ecosystems, and the preservation of natural, cultural and historical resources for future generations. Previously, Ms. Miyata worked as the Special Projects Coordinator for the Chairperson of the Department of Land and Natural Resources. Ms. Miyata has written and presented on conservation topics relating primarily to natural resource management and water resources in Hawai'i and specifically, Wai'anae *ahupua'a*. Additionally, she engages and involves surrounding communities, local schools, students, and teachers in voluntary stewardship to *malama 'āina*. She sits on the Board of Directors for the Hawaii Association for Watershed Partnerships. She earned her J.D. and Environmental Law Certificate in 2008 from William S. Richardson School of Law where she was a member of Delta Theta Phi Legal Fraternity, her B.S. in Business Administration in 2004 from Colorado State University, and her B.S. in Natural Resource Management in 2002 from Colorado State University where she was a member of Sigma Iota Epsilon Honors Society and Gamma Beta Phi Honors Society. She is admitted to the Hawaii State Bar.

Our Forests. Our Life. Watershed Protection by 2030.



Hawai'i is home to unique ecosystems that are in need of our protection. Photo Credits (from left to right): Christian Kahahawai, Nate Yuen, Ryan Chang.

OVERVIEW

The Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW) is responsible for managing over 1 million acres of public land across the state. DOFAW managed lands include forested watersheds that supply Hawaii's drinking water, unique native ecosystems found no where else in the world and cultural resources. Protection is needed in order to safeguard these invaluable resources in the face of threats such as invasive species and climate change.

COMMITMENT AND GOALS

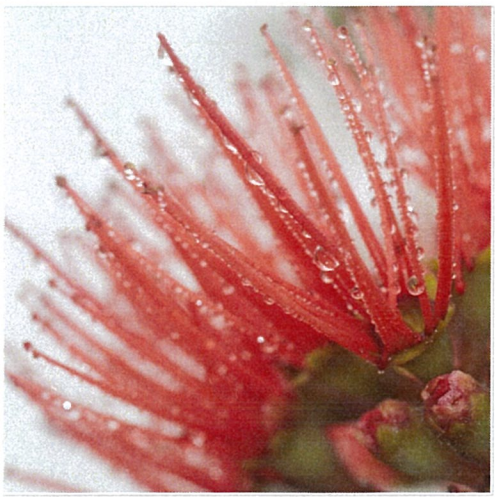
In response to these threats, the State is committed to protect 30% (253,000 acres) of Hawaii's highest priority watershed forests by 2030. Of the 843,000 acres identified as priority watershed across the State, only about 140,000 (17%) are currently protected.

Invasive plants and animals are the biggest threats to the health of Hawaii's native ecosystems. The State, with the help of partners, works to lessen the impact of these threats by removing ungulates (hooved animals such as pigs, goats, deer) from priority watershed areas, controlling the spread of invasive weeds, planting native trees to restore badly degraded areas, constructing fire breaks, acquiring new land for hunters and hikers, and building fences to keep out ungulates.

There have been over 40,000 acres of new fenced watershed areas in the last five years. However, more funding is needed to support the long-term management and maintenance of these newly protected areas. While our remaining forests are largely healthy and functioning, the State lacks the capacity to effectively manage and maintain that health in light of advancing threats and insufficient sustainable funding to support the staff and programs required to achieve the level of protection that is needed. DOFAW works to leverage non-State funds and is developing innovative financing mechanisms to help fill this gap.

EXPECTED BENEFITS

- Protect the source of Hawaii's fresh water - our native forests.
- Reduce erosion that muddies our streams and beaches.
- Prevent the extinction of animals and plants found nowhere else in the world.
- Increase carbon storage by protecting forests and planting native trees.
- Preserve cultural practices and sites in the wao akua.
- Combat the spread of invasive plants and pests, including diseases like Rapid 'Ōhi'a Death (ROD).



DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE

DIVISION OF FORESTRY AND WILDLIFE
1151 Punchbowl Street, Room 325 | Honolulu, HI 96813

Watershed Partnerships assist the State manage and protect native forests. Their ability to work on public and private lands enables landscape-scale protection across thousands of acres. Photo Credits (from left to right): Kirsty Gallaher and Ryan Chang.

DOFAW PROGRAM PRIORITIES

- Water
- Fire & Forest Health
- Native Ecosystems
- Forestry
- Recreation

PARTNERS

Many agencies and organizations help supplement State funding for watershed protection. These include:

- 10 Watershed Partnerships*
- U.S. Fish & Wildlife Service
- USDA Natural Resources Conservation Service
- Hawai'i Department of Health
- County Departments of Water Supply
- The Nature Conservancy
- U.S. Forest Service
- Kamehameha Schools
- And many more private and public organizations

NEED FOR WATERSHED PROTECTION

- 'Ōhi'a make up 80% of our watersheds. Our water supply is dependent on these native 'ōhi'a forests.
- Eroding soil caused by ungulate damage can smother coral reefs. Forests can reduce erosion by 90%.
- Studies by UH estimate the value of O'ahu's Ko'olau forests to provide fresh water and other ecosystem services at $14 billion.
- A fraction of tourism dollars is spent to protect the forests that provide the aesthetic backdrop of our visitor industry.

BUDGET

Watershed protection is estimated to cost $11 million per year. This includes the capital improvement project cost to build fences and general funds that support the removal of ungulates and weeds from priority areas.

*State funding for the State's Watershed Partnerships Program are typically matched 1:1.
In FY17 $4.1 million of non-State match was contributed to the Watershed Partnerships Program.

CONTACT PERSON

Emma Yuen
Native Ecosystems Program Manager
Division of Forestry and Wildlife, DLNR
Emma.Yuen@hawaii.gov
(808) 587-4170

PROTECTING HAWAII'S GROUNDWATER THROUGH COORDINATION and COLLABORATION WITH OTHER AGENCIES & OUTREACH and EDUCATION

The Hawaii Department of Health (DOH) Groundwater Protection Strategy was finalized in June 2017. The Safe Drinking Water Branch will present the three goals of the strategy and the related objectives.

Goal 1: Monitor and assess groundwater quality.
Goal 2: Identify and prioritize groundwater contaminations threats.
Goal 3: Mitigate priority contamination threats and prevent contamination.

Meeting Goal 3 of the Hawaii Groundwater Protection Strategy involves multiple DOH branches and offices: Safe Drinking Water Branch (GW106/DWSRF 15%), Wastewater Branch (CWSRF), Clean Water Branch (SW106), Solid & Hazardous Waste Branch (SHWB), Hazard Evaluation and Emergency Response Office (HEER), as well as other agencies, organizations and stakeholders.

Outreach and Education is also critical to protecting our groundwater resources. What message are we presenting and who do we need to present this to.

CONFERENCE EVALUATION

2018 Joint Government Water Conference
"Protecting Hawaii's Groundwater"
University of Hawaii at Manoa, Campus Center Ballroom
July 26, 2018

CONFERENCE EVALUATION FORM

1. How much experience do you have working in water/wastewater industry program areas?

___ 0-1 years	___ 2-5 years	___ 5-10 years	___ 10-20 years	___ 20+ years

2. Which water industry area(s) do you work in? (Check all that are applicable)

___ Drinking Water ___ Wastewater ___ Water Quality

___ Water Resources ___ Water Protection ___ Watershed Management

___ Other (specify): _____

3. How would you rate the overall conference?

____ Excellent	____ Good	____ Adequate	____ Poor

4. What did you like about the conference? _____

_____

_____

5. What did you dislike about the conference? _____

_____

_____

6. How do you rate the presentation of technical information (was it presented in an understandable and interesting manner)?

____ Excellent	____ Good	____ Adequate	____ Poor

7. Did this conference meet your expectation?

____ Yes	____ No

Comments: _____

_____

Please turn over for more questions. Thanks.

8. Have you attended any of the previous Joint Government Water Conference(s)?

___ Yes ___ No If Yes, would you rate this conference as: BETTER WORST

9. In the future, would you attend this type of conference again?

____ Yes	____ No

Comments: _____

_____

10. In April 2015, the Hawaii Department of Health (DOH) implemented a Nutritional Wellness Policy that committed us to provide a safe, healthy, and productive environment for its employees and members of the public using its facilities or attending a DOH sponsored event. The adoption of this policy shall ensure that healthy choices are available whenever food and beverages are purchased with state or federal funds for DOH meetings, conferences, and other DOH sponsored events throughout the state. Do you think that the food and beverages served at today's conference provided you with a healthy choice or not.

_____ YES _____ NO If NOT (please explain) _____

_____

_____

11. Are there aspects of the conference that you believe should have greater (or less) emphasis?

_____

_____

12. Do you have any suggestions on how the conference could be improved?

_____

_____

13. Do you have any suggestions for topics for future conferences?

_____

_____

Thank you for attending the 2018 Joint Government Water Conference and for completing this evaluation form. Your comments will help us to better plan future conferences.

OPTIONAL:
Name: _____