

CLIMATE OF CHANGE:

ENERGIZING A SUSTAINABLE FUTURE FOR PACIFIC ISLANDS

26TH PACIFIC ISLANDS ENVIRONMENT CONFERENCE

June 23 - 25, 2009 * Saipan, CNMI

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WELCOME LETTER

Hafa Adai, Tirow, and Welcome!

In today's rapidly changing society, the world is tasked to address environmental concerns in a more sustainable manner in order to alleviate the burdens we place on our delicate ecosystems. The world's consumption and exploitation of natural resources has changed our relationship with our environment dramatically, and as we scramble to find solutions to the challenges we face – now and in the future – we prepare ourselves for the strenuous journey that lies ahead of us.

Here in the Pacific, we flourish on our ability to preserve our cultural and traditional roots, keeping us resilient through the changing tides. The prospect of sustainable environmental practices on our islands opens the door to improve not only our “green” consciousness, but the state of our islands’ environments as well. Our battle has only begun, and it is heartwarming to know that each and every one of you is determined to make a difference throughout the Pacific.

We trust that you will find this conference invigorating and inspirational in moving our concentration toward a more sustainable future for our islands. Your participation displays your support for reaching our goals of better managing and conserving the resources we highly value.

Please enjoy the conference, as well as your time here on Saipan.

Si Yu'us Ma'ase & Ghillisow,

Frank M. Rabauliman
Director
CNMI Division of Environmental Quality

John McCarroll
Manager, Pacific Islands Office
U.S. EPA Region 9

TUESDAY, JUNE 23			WEDNESDAY, JUNE 24			THURSDAY, JUNE 25		
7:30 a.m.	Registration, Exhibits, Refreshments		Registration, Exhibits, Refreshments		Registration, Refreshments			
8:00 a.m.	Welcome and Opening Program		Marianas Military Buildup Overview		Science for Effective Management: Identifying Watershed Effects in Coral Reef Ecosystems	Restoring and Revitalizing the Land: Brownfields Programs in the Pacific	Recycling and New Solid Waste Management Technologies	Preparing for Climate Change: A Framework for Island Readiness
8:30 a.m.			Strategies for Island Sustainability: The Importance of Vision and Follow-through		BREAK			
9:15 a.m.	Keynote: Planning for a Future Without Oil Gil Masters, Stanford University				BREAK			
10:00 a.m.	BREAK		BREAK		BREAK			
10:30 a.m.	Confronting Climate Change in the Pacific: National, Regional, and Local Perspectives		Pacific Success Stories		Closing Session and Panel Discussion			
11:30 a.m.								
12:00 p.m.	LUNCH BUFFET: Jungle Stage Sponsored by CNMI Coastal Resources Management Office and ExxonMobil		LUNCH on own		LUNCH (Box Lunch Pick-up, Pre-order required)			
1:30 p.m.	Climate Change 101	Perspectives on Water/Wastewater Operator Training and Certification	Environmental Education: Schools and Youth	Green Building: LEED and Tropical Building Codes	Water Research in the Pacific	Micronesia Challenge and Sustainable Conservation Financing	Field Trips: Marpi Brownfields, UXO (Departs 11:30 a.m.) Mañagaha Conservation Snorkel (Departs 12:15 p.m.)	
3:00 p.m.	BREAK		BREAK					
3:30 p.m. to 5:00 p.m.	Adaptation to Climate Change in the Pacific	Providing Safe Water and Wastewater Services in the Pacific Islands	Environmental Education: Social Marketing	Renewable Energy Technology Showcase	Laboratory Capacity and Communication	Department of Defense Environmental Stewardship in the Marianas		
	5:45 p.m. Governor's Reception Fiesta Resort (Transportation Provided)		5:30 p.m. "Made in the Marianas" Festival CNMI Museum (Transportation Provided)		5:00 p.m. Night Market, Garapan (Transportation on your own)			

TUESDAY, JUNE 23

7:30 a.m. **Registration – Exhibits – Refreshments**8:30 a.m. – 9:15 a.m. **Welcome and Opening Program****Facilitators:** Fran Castro, CNMI DEQ, and Michael Mann, EPA Region 9**Color Guard:** Marianas High School JROTC**National Anthem:** Nicollette Lopez**Opening Prayer:** Fr. Ryan P. Jimenez**Welcoming Remarks:**

Frank M. Rabauliman, Director, CNMI Division of Environmental Quality (DEQ)

The Honorable Benigno R. Fitial, Governor of the CNMI

The Honorable Gregorio “Kilili” Camacho Sablan, CNMI Representative, 111th U.S. Congress (videotaped)

The Honorable Felix P. Camacho, Governor of Guam

John McCarroll, Manager, Pacific Islands Office, EPA Region 9

Laura Yoshii, Acting Regional Administrator, EPA Region 9

Environmental Awareness Month Awards:

Frank M. Rabauliman, DEQ Director, and David Rosario, DEQ Deputy Director

9:15 a.m. – 10:00 a.m. **Keynote: “Planning For a Future Without Oil”**

Gil Masters, Stanford University

10:00 a.m. – 10:30 a.m. Break

10:30 a.m. – 12:00 p.m. **Confronting Climate Change in the Pacific: National, Regional, and Local Perspectives**

The impacts of climate change are beginning to be felt throughout the Pacific, and swift action may be required to effectively mitigate and adapt to these impacts. Panelists will examine approaches to addressing the effects of climate change in the Pacific from social, scientific, and policy perspectives.

Moderator:

Laura Yoshii, Acting Regional Administrator, EPA Region 9

Panelists:

Mark Lander, Water and Environmental Research Institute, University of Guam

“Assessment of Climate Change Hazards in Micronesia”

Deborah Jordan, Director, Air Division, EPA Region 9

“Proposed Federal Actions Related to Greenhouse Gas Emissions”

Cheryl Anderson, Director, Hazards, Climate, and Environment Program, University of Hawaii Social Science Research Institute

“Challenges of Climate Change in Island Communities”

Joe Konno, National Office of Environment and Emergency Management, Federated States of Micronesia

“The Climate Change Battle: A Glimpse from the Front”

12:00 p.m. – 1:30 p.m. Lunch

Jungle Stage *Sponsored by CNMI Coastal Resources Management Office and ExxonMobil*

“Climate of Change: Energizing a Sustainable Future for Pacific Islands”

1:30 p.m. – 3:00 p.m. **Concurrent Sessions I****Room: Royal Taga A Climate Change 101****Speaker:**

Ben Machol, Manager, Clean Energy and Climate Change Office, EPA Region 9

Goal: The presentation aims to: (1) provide an overview of many aspects of climate change, including: climate science, greenhouse gases, energy and energy consumption, life cycle analyses, and what you can do; and (2) increase participants' understanding of climate change impacts on health and society.

Description: The session focuses on the science, sources, and impacts of greenhouse gases; regional and international carbon emissions, by countries and industrial sectors; the importance of promoting energy efficiency and renewable energy; decision-making utilizing life cycle analysis and its related climate change implications; and what individuals can do at home, at work, and on the road to minimize their impacts. The session will also include a 30-minute video.

Room: Lilac Perspectives on Water/Wastewater Operators Training and Certification**Facilitator:**

Capt. Derek Chambers, U.S. Public Health Service, CNMI DEQ

Speakers:

Cecilio Raiukiulipiy, Mariana Islands Water Operators Association

Juliana de la Rosa, SDWIS Administrator, CNMI DEQ

Eugene Uehara, Palau Water Operators Association, Palau Community College

Goal: By the end of the session the participants will: (1) be aware of different locally based approaches for providing training for water and wastewater operators; (2) become aware of external resources available for the training of water and waste water operators; (3) become aware of different approaches to providing certification services for water and waste water operators.

Description: This session will focus on the development of water and wastewater system operator training and operator certification programs, and will present the range of opportunities and types of training and certification available in the Pacific Islands and elsewhere.

Room: Tapachao Environmental Education – Youth Program**Facilitator:**

Lisa Huynh Eller, Outreach and Publications Coordinator, CNMI DEQ

Speakers:

Jennifer Brown, Educator, Saipan Southern High School

Ben Namakin, Youth Environmental Ambassadors Program, Pohnpei

Goal: To present successful examples of environmental education within the Pacific Islands region and to foster targeted discussions around the challenges of each program

and how these programs can be tailored for implementation on other islands. Additionally, the goal of this session is to involve youth as leaders in community-based environmental protection.

Description: This session will focus on environmental education in schools and the community, with emphasis on outreach to youth. Youth leaders will have an opportunity to present their unique viewpoints, and those responsible for outreach to youth will also discuss some of the challenges they face. Training teachers to present environmental education in schools will be discussed, and the session will close with an interactive presentation from Ben Namakin.

3:00 p.m. – 3:30 p.m. Break

3:30 p.m. – 5:00 p.m. **Concurrent Sessions II**

Room: Royal Taga A **Adaptation to Climate Change in the Pacific**

Facilitator:

David Schaller, Sustainable Development Administrator, Office of Conservation and Sustainable Development, City of Tucson

Speakers:

Trina Leberer, Micronesia Program Director, The Nature Conservancy

Ben Namakin, Executive Director, Pacific Islands Climate Revolution

Yimnang Golbuu, Chief Researcher, Palau International Coral Reef Center

Goal: To increase understanding of climate change policies and adaptation strategies, and the type of technical assistance available for both, by sharing examples currently being implemented in the region.

Description: Climate change is happening now and is generating impacts worldwide. Abnormally rapid changes in climate are driving plants and animals out of their current ranges, disrupting water flows in streams and rivers, raising sea levels and increasing ocean acidity, causing coastal flooding and erosion, and driving some species to the brink of extinction. Impacts on ecosystem services will affect millions of vulnerable human communities. Ecosystem-based strategies that will assist the natural world and human communities in adapting to the impacts of climate change must be implemented and supported through policies and funding at all levels. In Micronesia, we are working to address and adapt to the threat of climate change at several levels. Collectively, small island states are a leading voice for reductions in greenhouse gas emissions in international forums such as the United Nations Framework Convention on Climate Change (UNFCCC). At the regional level, initiatives such as the Micronesia Challenge serve as a framework for adaptation strategies, and regional partners provide technical assistance and tools to support the work of local organizations and communities, who are raising awareness and developing management plans that incorporate strategies to adapt to climate change on-the-ground. This panel will present examples of current work around the region at many of these levels to address and adapt to climate change.

Room: Lilac **Providing Safe Water and Wastewater Services in the Pacific Islands**

Facilitator:

Barry Pollock, Drinking Water Program, EPA Region 9

Speakers:

Mariano Iglecias, Water and Wastewater Division Manager, Commonwealth Utilities Corp. (CUC)

Jonathan Woody, Naval Facilities Guam

Matthew Heberger, Research Associate, Pacific Institute

Goal: Participants will share experiences with utility construction projects, operations, and management with an emphasis on activities that can encourage long-term sustainability. Participants will also become aware of external resources that may be available to assist with sustainable utility and water resource management goals.

Description: This session will present different aspects of water and wastewater infrastructure, treatment, construction, and management, and will encourage dialogue and discussion on issues related to sustainable water utility and water resource management, including construction projects, water sources and supply, treatment, and sustainable management tools such as water conservation.

Room: Tapachao **Environmental Education and Social Marketing**

Facilitator:

Kathleen M. Herrmann, Coral Reef Management Fellow, CNMI DEQ

Speakers:

Brooke Nevitt, RARE Campaign Manager and Coral Reef Outreach Specialist, CNMI Coastal Resources Management Office

Peggy Denney, I-Recycle Program, Guam

Goal: To present successful examples of environmental education and social marketing within the Pacific Islands region and to foster targeted discussions around the challenges of each program and how these programs can be tailored to implement on other islands.

Description: This session will take you through the steps to design and develop a social marketing campaign, share stories from the CNMI's efforts, encourage participants to begin to formulate how they might incorporate aspects of this approach into their education and outreach efforts, and will tackle the struggles of getting environmental information to the community in a way that's both effective and likely to change behavior.

5:45 p.m. **Governor's Reception, Fiesta Resort**

Reception is 6:00 p.m. – 9:00 p.m.

Bus departs from the World Resort at 5:45 p.m.

Bus returns to the World Resort at 8:00 p.m. and 9:00 p.m.

WEDNESDAY, JUNE 24

7:30 a.m. Registration – Exhibits – Refreshments**8:00 a.m. – 8:30 a.m. Marianas Military Buildup Overview**

Don Schregardus, Deputy Assistant Secretary of the Navy (Environment)

8:30 a.m. – 10:00 a.m. Strategies for Island Sustainability: The Importance of Vision and Follow-through

Ensuring a sustainable future for Pacific Islands requires a shared strategic vision and dedicated leadership to reach the desired outcome. Panelists will present their strategic visions and approaches toward sustainability in their respective jurisdictions.

Moderator:

Enrique Manzanilla, Director, Communities and Ecosystems Division, EPA Region 9

Presenters:

Misty Conrad, Senior Project Leader, National Renewable Energy Laboratory

“Energy Future in the Pacific”

Kimberly Gates, Supervisory Project Mgr and LEED Coordinator, Naval Facilities Marianas

“LEED Certified Military Buildup”

Michael Keyser, Chief Executive Officer, American Samoa Power Authority (ASPA)

“Vision for a Sustainable ASPA”

Kathy Yuknavage, Board Member, Mariana Islands Nature Alliance (MINA)

“MINA’s Vision for a Sustainable CNMI”

10:00 a.m. – 10:30 a.m. Break

10:30 a.m. – 12:00 p.m. Pacific Success Stories

Panelists will present on significant environmental results from successful projects and programs throughout the Pacific region.

Moderator:

John McCarroll, Manager, Pacific Islands Office, EPA Region 9

Presenters:

Mariano Iglecias, Water and Wastewater Division Manager, Commonwealth Utilities Corp. (CUC)

“Progress Toward a 24-Hour Water Supply on Saipan”

Michael Keyser, Chief Executive Officer, American Samoa Power Authority (ASPA)

“American Samoa Scrap Metal Removal Project”

Robert Jordan, Environmental Chemist/Office Manager, Allied Pacific Environmental Consulting (APEC)

“Saipan Southern High School Renewable Energy Project”

LT Elena Vaouli, U.S. Public Health Service, Water Program Manager, American Samoa EPA

“Freely Associated States Lab Certification Program”

12:00 p.m. – 1:30 p.m. Lunch on own

1:30 p.m. – 3:00 p.m. **Concurrent Sessions III**

Room: Royal Taga A **Green Building: LEED and Tropical Building Codes**

Facilitator:

Brian Rippy, Civil Engineer and LEED-AP, American Samoa Soil & Water Conservation District

Speakers:

Howard Wiig, Institutional Energy Analyst, Hawaii Department of Business, Economic Development and Tourism
Victor Barrett, Zoning Administrator, CNMI

Goal: To discuss green building codes and standards relevant to tropical environments.

Description: This session will highlight building design and construction practices, codes, and standards for tropical environments that reduce energy consumption and utilize environmentally sustainable materials. Participants will discuss Leadership in Energy and Environmental Design (LEED) standards for building and neighborhood design, as well as energy efficient building codes.

Room: Tapachao **Water Research in the Pacific**

Facilitator:

Joe Kaipat, Safe Drinking Water Program Manager, CNMI DEQ

Speakers:

Capt. Derek Chambers, U.S. Public Health Service, CNMI DEQ
Dr. Mark Lander, Water and Environmental Research Institute, University of Guam
Dr. Gary Denton, Water and Environmental Research Institute, University of Guam
Tasleem Hasan, World Health Organization / South Pacific Applied Geoscience Commission (SOPAC)

Goal: To expose the participants to the broad range of research activities and opportunities related to water resources and sustainable utilities in the Pacific Islands environment and to discuss and determine if there are additional water resource related issues that need to be addressed and if so, how they can be met.

Description: The session will cover the broad range of research activities related to water and water resource management and sustainable utilities in the Pacific Islands environment, including surface and groundwater sources, modeling, watershed protection, sustainable utility operations and management, water quality, and other areas.

Room: Lilac **Micronesia Challenge and Sustainable Conservation Financing**

Facilitator:

Trina Leberer, Micronesia Program Director, The Nature Conservancy

Speakers:

Charlene Mersai, Regional Coordinator, Micronesia Challenge
Lisa Andon, Deputy Executive Director, Micronesia Conservation Trust
Wendy Wiltse, Pacific Islands Contact Office, EPA Region 9

Goal: To raise awareness, support, and participation for the Micronesia Challenge and to show the different schemes that are currently financing the Challenge and Protected Area Network activities, followed by discussions on potential financial sources and mechanisms that can be put in place (i.e., endowments, advised sinking funds, mitigation banking, in-lieu fee sponsorships, “green fees”).

Description: This session will provide an overview of the Micronesia Challenge, an initiative signed by 5 governments in Micronesia: Republic of Palau, Republic of Marshall Islands, Federated States of Micronesia, Territory of Guam and the Commonwealth of the Northern Mariana Islands. The Challenge aims to effectively conserve 30% of near-shore marine resources and 20% of terrestrial resources by 2020. An update will be given on the progress of the Challenge since the Initiative was signed, followed by presentations on alternative funding sources and strategies that could potentially support the Micronesia Challenge.

3:00 p.m. – 3:30 p.m. Break

3:30 p.m. – 5:00 p.m. **Concurrent Sessions IV**

Room: Royal Taga A **Renewable Energy Technology Showcase**

Facilitator:

Misty Conrad, Senior Project Leader, National Renewable Energy Laboratory

Speakers:

Chuck Jordan, Partner, RIM Architects

Larry Bruton, Founder, Bruton Enterprises, Chuuk, FSM

Frederick LaCroix, CEO, The PowerSource Group, LLC

James R. Thomas, Co-Founder, Pacific Wind & Solar, LLC

Scott Hagen, Pacific Solar and Photovoltaics, Guam

Goal: To familiarize participants with technologies available for generating renewable energy and their potential applications on a residential or small commercial scale in the Pacific region.

Description: Presenters will discuss renewable energy generation technologies, the economics of choosing renewables, and lessons learned from deployment throughout the region. Technologies to be discussed include solar photovoltaic, solar hot water, wind, and cogeneration (combined heat and power).

Room: Tapachao **Sharing Resources: Building Sustainable Laboratory Capacity and Communication**

Facilitator:

LT Elena Vaouli, U.S. Public Health Service, Water Program Manager, American Samoa EPA

Goal: To improve communication among U.S.-affiliated laboratories and to promote laboratory capacity building through resource sharing.

Description: This session will focus on developing strategies for improving communication among water quality laboratory staff in CNMI, Guam, American Samoa and the Freely Associated States with continued support from Region 9. Improved communication may open the doors to better collaboration and resource sharing between labs in the Region. Presenters will discuss ideas for enhancing the existing FAS Laboratory Certification Program, developing a regional laboratory network, and ways that labs can share expertise and experience with implementing sophisticated lab methods under the constraints of limited resources and remote conditions.

Room: Lilac

Department of Defense Environmental Stewardship in the Marianas: Now and in the Future

Facilitators:

Lisa Fiedler, Environmental Director, Joint Guam Program Office
Rick Raines, Environmental Business Line Manager, Joint Region Marianas

Goal: To present an overview of DoD's environmental programs and stewardship in the Marianas.

Description: The Department of Defense is a sound steward of the environment. The Department of the Navy has an impressive track record of environmental management as exemplified by the DoD's environmental program in the Marianas. Under the Joint Region Marianas, environmental management will be consolidated, creating efficiencies and simplifying resource agency involvement with DoD. The Joint Guam Program Office is the action proponent for the US Marine Corps relocation to Guam and is aligned with the Joint Region Marianas as all component services will fall under the Joint Region. As a result, sound environmental stewardship will continue with the US Marine Corps relocation and other military realignment efforts.

5:30 p.m. – 8:00 p.m.

Made in the Marianas Festival, CNMI Museum

Shuttle provided, departs World Resort on the ½ hour; departs CNMI Museum on the hour

Description:

The Made in the Marianas Festival, the first of its kind, is being organized by members of the Off the Beaten Path (OBP) to showcase indigenous products created with the ingenuity, imagination, and originality of CNMI artists.

Attendees of the Festival can expect to be charmed by locally produced fashion accessories, crafts, garments, gifts, and other products found uniquely in the Marianas. The event will entice visitors to try delectable local dishes and beverages and introduce the local community to the concept of buying foods and products that are made locally to help to build sustainable communities.

The Festival also aims to heighten awareness and appreciation of the CNMI Museum and its cultural and historic importance. During the Festival, visitors are welcome to view current exhibits and displays currently featured at the CNMI Museum of History and Culture. A portion of the proceeds from the event will be donated to the Museum and the planning of OBP's next event to benefit the CNMI Autism Society.

THURSDAY, JUNE 25

7:30 a.m. **Registration – Refreshments**8:30 a.m. – 10:00 a.m. **Concurrent Sessions V**

Room: Royal Taga A **Science for Effective Management: Identifying Watershed Effects in Coral Reef Ecosystems**

Facilitator:

John A. Starmer, CNMI Coastal Resources Program

Speakers:

Dr. Peter C. Houk, Pacific Marine Resources Institute

Jesse T. Cruz, EMAS Division Administrator, Guam EPA

Yimnang Golbuu, Chief Researcher, Palau International Coral Reef Center

Goal: To highlight the application of monitoring techniques that are sensitive to land-based sources of pollution, and to discuss how science in the form of question-driven monitoring leads to informed management.

Description: This session will discuss the importance of question-driven marine monitoring programs, the relationship of biological and water quality monitoring, the use of monitoring to identify linkages between watersheds and coastal environments, and the need for coordination between federal and island agencies. Through this session, we will advance the effective application of monitoring techniques sensitive to land-based sources of pollution throughout Micronesia. In addition, identify/create language in jurisdictional water quality standards to improve or enhance their effectiveness, and discuss the differences between water quality and biological data. Discuss the potential for a standardized approach (or at least framework) for monitoring.

Room: Tapachao **Restoring and Revitalizing the Land: Brownfields Programs in the Pacific**

Facilitator:

Pankaj Arora, Brownfields Program, EPA Region 9

Speakers:

Marie Rongone, Senior Counsel, EPA Region 9

Susan L. Muza, Senior Representative, Agency for Toxic Substances and Disease Registry, Pacific Southwest Region

Goal: To highlight significant components of the Brownfields program, including health studies; to provide legal and programmatic information to the islands; and to discuss the unique challenges faced by the islands to implement a successful and results-oriented Brownfields program.

Description: This session will be helpful for local government officials, the public, communities, and other interested parties to understand the basics of the Brownfields program. The presentations are designed to help the audience understand issues that are critical for successful implementation of the program. A presentation on the unexploded ordnance (UXO) health survey by ATSDR will highlight the partnership between different

federal and local agencies and benefits to the communities to better manage, address, and reduce the negative health impacts of UXOs.

Room: Lilac Recycling and New Solid Waste Management Technologies

Facilitator:

Brian Bearden, Chief Engineer, CNMI DEQ

Speakers:

Dr. Marc Rogoff, Project Director, SCS Engineers

Steve Hiney, Solid Waste Technical Advisor, CNMI Dept. of Public Works

Goal: Increase understanding of new solid waste technologies, such as waste to energy, as it pertains to island solid waste planning. Present successful examples of recycling efforts in the Pacific Islands and foster targeted discussions around topics including semi-aerobic landfill methods.

Description: Due to limited space and fragile ecosystems, solid waste is a significant issue in the Pacific Islands. Incorporating waste minimization through innovative recycling efforts and new solid waste technologies that minimize greenhouse gas production and produce energy are some of the tools that will be discussed.

Room: Royal Taga B Preparing for Climate Change: A Framework for Island Readiness

Speaker:

David Schaller, Administrator, Office of Conservation and Resource Development,
City of Tucson, Arizona

Goal: Participants will receive key resource material related to climate change adaptation, especially information on conducting vulnerability and risk assessments as well as case studies of climate change adaptation efforts now underway or completed in similarly vulnerable coastal areas of the world.

Description: This session will present a practical, “no regrets” framework for climate change vulnerability and adaptation planning on Pacific Islands. Beginning with the immediate need to safeguard significant environmental infrastructure investments across the islands, the framework outlines other key elements of climate change adaptation planning that are now becoming essential to environmental, community and economic security in the Pacific. These include: (1) identifying how climate change will affect major economic and social sectors in the islands, (2) creating a climate change readiness team, (3) conducting climate change vulnerability and risk assessments, and (4) developing and implementing a climate change preparedness and adaptation plan.

The framework to be presented builds on research conducted by national and international climate change adaptation efforts already underway and supported by scientific projections of likely near to mid-term impacts arising from climate disruption. Impacts specific to Pacific Islands include sea level rise, increased storm intensity and frequency, higher temperatures, disease vector movement, drought, and socio-economic impacts from all of the above.

Practical and systematic steps that island communities can use will be presented so that with careful planning the worst effects of climate change already in the global atmospheric

system can be avoided. These steps will be shown to offer co-benefits of enhanced energy security, more resilient local economies, and more stable governance in the face of multiple threats arising from climate change. Finally, the session will present suggestions on how to move past the common barriers to climate change action as well as how best to build and maintain support for a consensus approach to climate change preparedness.

10:00 a.m. – 10:30 a.m. Break

10:30 a.m. – 11:30 a.m. **Closing Session**

Room: Royal Taga A **Panel Discussion: Perspectives on the 26th Pacific Islands Environment Conference**

Panelists will present their observations from the conference on key themes (energy, water issues, and climate change) and provide constructive next steps for advancing the vision and dialogue generated throughout the conference.

Moderator:

John McCarroll, Manager, Pacific Islands Office, EPA Region 9

Panelists:

Misty Conrad, Senior Project Leader, National Renewable Energy Laboratory

Matthew Heberger, Research Associate, Pacific Institute

Gil Masters, Stanford University

Benediction: Fr. Noli Aparce

Retiring of Color Guard: Marianas High School, JROTC

11:30 a.m. Box Lunch Pick Up (Pre-order required)

11:30 a.m. – 4:30 p.m. **Field Trip:** Marpi Brownfields, UXO

12:15 p.m. – 5:00 p.m. **Field Trip:** Mañagaha Conservation Snorkel

5:00 p.m. – 9:00 p.m. **Night Market in Garapan** (fronting Fiesta Resort & Hyatt)
(Transportation on your own)

FIELD TRIPS

Thursday, June 25 - 11:30 a.m. to 5:00 p.m.

**Mañagaha Boat Ride and Snorkel
\$15.00 per person***Fees include bus & boat transfers and landing fee; snorkel gear is extra and must be arranged ahead of time*

Participants will snorkel in CNMI's crown jewel, the Mañagaha Marine Conservation Area, a fully protected no-take area. Mañagaha Island is a small reef-island located 2.5 kilometers (1.6 miles) off the west coast of Saipan. The island lies within a high quality coastal lagoon marine ecosystem that contains a rich diversity of coral and fish species. Mañagaha Island and its surrounding waters are an important part of the CNMI natural history, cultural history, and its beauty. The area also is an ideal recreation destination that generates significant direct and indirect revenue for the CNMI.

Over the past decades Mañagaha Island and its surrounding waters have gained increasing popularity as a visitor destination. For example, since the 1980s, the island has had an average of 500 to 800 visitors on most days of every year. Without proper management and protection, this intensive use and other impacts, such as water quality degradation and fishing, will eventually lead to significant adverse impacts to the island's natural, cultural, and historic resources. Therefore, in August 2000, the CNMI Legislature made a finding that "Mañagaha Island and its surrounding waters contain historical, cultural, and natural resources that must be protected."

Field trip participants will enjoy this conservation area in the water and on land, and will have a first-hand view of a marine conservation area rich with coral reefs and marine life. Mañagaha also has a significant diversity of associated flora and fauna, all which provide historical, cultural, and natural resources for the enjoyment of residents and visitors alike.

Snorkel gear not included. Snorkel rentals available at the Saipan World Resort beach activities desk; please rent these prior to 12:00 p.m. We also suggest you order a box lunch from the conference registrar, only \$8.00. Lunches may be eaten on the bus or at the site.

Tour Itinerary:

12:15 p.m.	Depart World Resort
1:00 p.m.	Boat departs for Mañagaha
4:00 p.m.	Boat departs Mañagaha for Saipan
5:00 p.m.	Arrive at World Resort

**Marpi Unexploded Ordnance Tour
No charge**

The Marpi Area is located on the northern end of Saipan. This area was once the site of one of the four military airfields constructed by the United States military after the invasion of Saipan during World War II (WW II). The construction of the airfield was first started by the Japanese military but was not finished as the war broke out.

The Marpi airfield, including the other airfields on the island, was built to prepare for the invasion of mainland Japan. The Marpi Airfield area was a major munitions depot with variety of large size ordnance and small arms munitions. A large portion of the Marpi area is undergoing a project with EPA Brownfields funding to remove unexploded ordnance (UXO) left behind by the U.S. Military. It is hoped that the site could be developed as either for green space or other redevelopment purpose that would benefit the CNMI community. In addition, the Marpi area is also the site for the Saipan OB/OD unit under the EPA RCRA Program – Remedial Action Plan (RAP), where collection of UXOs are stored and later disposed by open detonation once a threshold explosive net weight is reached. In this field trip, we will visit "Boom Cave," the OB/OD unit, and the Brownfields ordnance removal project. As a special part of the tour, **brace yourself** for an explosive experience as we watch an actual detonation of UXOs from the Suicide Cliff lookout point.

Participants for this field trip are required to wear shoes – **no open footwear**. We encourage you to bring a hat, sunscreen, and bottled water. We also suggest you order a box lunch from the conference registrar, only \$8.00. Lunches may be eaten on the bus or at the Suicide Cliff lookout point.

Tour Itinerary:

11:45 a.m.	Depart World Resort
12:10 a.m.	UXO Storage/Detonation Pit
12:45 p.m.	Detonation Site (Suicide Cliff Lookout Point)
1:30 p.m.	Marpi UXO Cleanup Project - Brownfields
2:30 p.m.	Boom Cave
3:15 p.m.	Pau Pau Beach - Meet & Greet Q/A (restroom stop)
4:35 p.m.	Arrive at World Resort

TUESDAY LUNCHEON SPONSORS



EXHIBITORS

Please take a moment to meet our exhibitors. Exhibits will be open through Wednesday afternoon. Thank you to our exhibitors and poster presenters for sharing their products and services with delegates of the 26th Pacific Islands Environment Conference.

Allied Pacific Environmental Consulting

Off the Beaten Path

EA Science and Technology

Tan Holdings Corporation

ESRI

Tetra Tech, Inc. (Guam)

Mariana Islands Nature Alliance (MINA)

University of Guam

U.S. Department of Agriculture
Natural Resources Conservation Service (NRCS)

CNMI Department of Public Works
Energy Division
Solid Waste Division

CNMI Coastal Resources Management Office

Joeten Enterprises

Herman B. Cabrera & Associates

Pacific Wind & Solar

CARBON OFFSET DONATIONS

Organizers of the Pacific Islands Environment Conference (PIEC) aim to reduce the event's carbon footprint. To reach this goal, we are collecting donations to help offset the carbon footprint produced by the conference. Participants may donate the suggested amounts based on origin of travel, and may contribute additional amounts to offset local energy use. These donations will be given to the Mariana Islands Nature Alliance (MINA), a local community-based nonprofit organization dedicated to the conservation of natural resources in the CNMI (www.minapacific.org).

The carbon offset donations will support MINA's efforts to engage the community in a revegetation project in Laolao Bay, a major watershed in Saipan, CNMI. The watershed suffers tremendously from sedimentation runoff into the adjacent coral reefs due to soil erosion in the upper watersheds, and continues to face a severe decline in coral reefs across the watershed. This location is both a high visibility dive site and a priority for conservation efforts in CNMI. Revegetation efforts are necessary and will significantly reduce sedimentation deposits into the Bay.

The PIEC, to the extent practicable and appropriate, commits to reducing energy use and utilizing offsets and other means to make PIEC meetings and documents carbon neutral. Thank you for helping us to reduce the impact of the Pacific Island Environment Conference on Saipan.

PLENARY SPEAKER BIOGRAPHIES

Cheryl L. Anderson

Cheryl L. Anderson is the Director of the Hazards, Climate, and Environment Program, University of Hawai'i Social Science Research Institute and is certified as an urban/regional planner. For the last sixteen years, she has conducted research and planning projects on climate and disaster risk management in the Pacific and Southeast Asia, with attention to gender and traditional ecological knowledge aspects of risk reduction. Some activities include: convening the 2004 Gender Equality and Disaster Risk Reduction Workshop and drafting the Honolulu Call to Action that was presented at the United Nation's World Conference on Disaster Reduction in Kobe, Japan 2005; developing State of Hawai'i's Multi-Hazard Mitigation Plan; facilitating a series of workshops in Micronesia in 2006 as a co-investigator of the Pacific Islands Regional Integrated Science and Assessment (RISA) climate program; participating in an IPCC expert meeting on climate impact analysis in 2007; co-organizing and facilitating the February 2008 Pacific Forum, sponsored by AusAID and UNDP, on linking disaster risk reduction, climate change adaptation, traditional knowledge, and gender; and, co-organizing the workshop on *Climate Change and the Micronesia Challenge: ways forward in adaptation and collaboration* in April 2009.

Misty Dawn Conrad

Misty Dawn Conrad is a Senior Project Leader and Technical Assistance Program Manager in the State, Local and Tribal Group of the Deployment and Industrial Partnerships Center at the National Renewable Energy Laboratory. She manages project teams in energy planning, policy, environmental impacts, island sustainability, agricultural applications and rural development. She manages the Technical Assistance Program, a venue for state and local officials to seek assistance in energy efficiency and renewable energy technologies, policies and programs. Her areas of expertise include cross-cutting environmental resource assessment and analysis, state and local program and policy analysis, rural development, brownfield reclamation and federal grant and loan technical review: design, development, process and evaluation. She has a Bachelor's of Science degree in Land Use and Environmental Resources with her Master's work in Environmental Policy and Law. Previously her work included such topics as the water/energy nexus, environmental remediation and water reclamation for the Colorado Department of Natural Resources.

Kimberly Gates

Kimberly Gates is a Project Manager and the LEED Coordinator for NAVFAC Marianas. She oversees military building projects from "cradle to grave" for multiple customers on the island of Guam. Prior to her tour on Guam she was the Innovative Remediation Technology Transfer Lead and Acquisition Team Lead for the Restoration Branch of the Naval Facilities Engineering Service Center (NFESC) at Port Hueneme, CA. At NFESC, Ms. Gates was also forward deployed to NASA-JPL as a remedial project manager for their National Priorities list cleanup site. Ms. Gates is a Navy junior, and has travelled and lived many places, mostly California. She holds a BS from Virginia Tech in Civil Engineering and MS in Environmental Engineering from Johns Hopkins University. She is a Registered Engineer in the State of Virginia and an Accredited Professional with the US Green Building Council's Leadership in Energy and Environmental Design (LEED AP).

Matthew Heberger

Matthew Heberger is a Research Associate in the Pacific Institute's water program. He has degrees from Cornell and Tufts Universities in engineering and hydrology, and is a licensed professional engineer. He's spent the last 10 years working on water issues as a consulting engineer, in water policy in Washington DC, and as a hygiene and sanitation educator in West Africa. He's currently researching issues related to water supply and water quality, the nexus between water and energy, and impacts of climate change on water resources. He was also the first author of the Pacific Institute's 2008 report, "Impacts of Sea Level Rise on the California Coast"

Mariano R. Iglecias

Mariano R. Iglecias is currently the Water Division Manager for the Commonwealth Utilities Corporation. Mr. Iglecias oversees daily water operations, participating in the coordination of all capital improvement projects, and implementation of Operation and Maintenance programs for the compliance of the Stipulated Order. Mr. Iglecias' career spans seventeen years with the Commonwealth Utilities Corporation with two years in Wastewater operations, nine years as a CUC Laboratory analyst and the last six years in Water Operations. A certified operator in water distribution and treatment and is now designated Direct Responsible Charge for the CUC Public Water System on Saipan.

Deborah Jordan

Deborah Jordan is Air Division Director for the U.S. Environmental Protection Agency's Region IX. She oversees about 100 staff members working with 45 state and local air agencies charged with improving air quality and implementing the Clean Air Act. Ms. Jordan also directs the Region's work on clean energy and climate change, including a vigorous effort in voluntary and incentive-based programs. Ms. Jordan has been air division director since March 2004, after serving as Chief of Staff to the Regional Administrator. She has worked at EPA since 1989. Ms. Jordan received her Ph.D. in chemical engineering from the University of California at Berkeley, and master's and bachelor's degrees from the University of Kansas.

Robert Jordan

Robert Jordan is the offspring of two peace-corps volunteers, born on Yap and raised on Saipan, Robert Jordan has called Micronesia home for nearly 3 decades. Rob is currently the CNMI Office and Project Manager for Allied Pacific Environmental Consulting, APEC: a full-service environmental consulting firm with offices on Guam and Saipan and with operations throughout the western Pacific region. Prior to joining APEC in 2006, Mr. Jordan worked for the CNMI Department of Public Works, Solid Waste Management Division, as assistant program manager where he oversaw a number of waste reduction, reuse and recycling initiatives, in addition to day-to-day operations at the Lower Base Transfer Station and Recycling Facility. For the past two years; Rob, his family and his colleagues at APEC have invested considerable time and energy into researching and developing plausible renewable energy strategies for the Marianas.

Michael Keyser

Mike Keyser is Chief Executive Officer and General Counsel of the American Samoa Power Authority. Mr. Keyser received his undergraduate degree in international business from Washington State University in Pullman, WA. He also holds a law degree from Seattle University School of Law, where he served as an associate editor of the law review. He has two published papers with the Florida State Journal of Transnational Law and Policy, including most recently, "The Best Kept Secret in the Law: How to Get Paid to Live on a Tropical Island." Prior to moving to American Samoa, Mr. Keyser practiced securities law for a boutique Seattle firm specializing in mergers, acquisitions and private & public offerings. In 2006, Mr. Keyser left his job as Director of the Bureau of Consumer Protection to join ASPA as its General Counsel. Mr. Keyser added the CEO hat in October 2007. During his time at ASPA, he has led ASPA's move into petroleum importation and sales, led the reorganization of solid waste collection, and, currently is in the process of overseeing a comprehensive rate revision and \$50m capital improvement plan. In his spare time, he is an avid scuba diver and golf nut. His handicap: woods and irons.

Joe Konno

Joe Konno is currently with the FSM National Office of Environment and Emergency Management in Pohnpei, serving as Coordinator for the FSM Second National Communication Project. The National Communication is a required report by Parties to the UN Framework Convention on Climate Change which contains country's greenhouse gas emissions, assessment of vulnerabilities and adaptation, mitigation and other issues. Mr. Konno is a member of the FSM Climate Change Country Team, the Convention on Biological Diversity (CBD) Ad Hoc Technical Expert Group on Biodiversity and Climate Change and the Pacific Regional Expert Group on Climate Change and Food Security. He was the Executive Director of Chuuk State EPA from 1994 to 2005. He did graduate studies at the International Global Change Institute at the University of Waikato, New Zealand in Climate Change and Adaptation. He is co-author of *Climate Proofing: A Risk-based Approach to Adaptation*, and the FSM Initial Communication to the UNFCCC.

Mark A. Lander

After receiving his PhD in Meteorology from the University of Hawaii, Mark A. Lander worked at the UH for several years, until the Office of Naval Research (ONR) offered him full-support to act as an on-site research specialist for the Joint Typhoon Warning Center. For nearly 10 years, Mark worked beside the operational forecasters at the JTWC to gain insight into the areas where basic research might best help operational typhoon forecasters. During these years, Mark learned much about tropical meteorology that he could not have learned in a formal academic setting. After the JTWC moved to Honolulu, he remained on Guam to become a full-time faculty member at the UOG's Water and Environmental Research Institute (WERI). He continued to pursue his interests in tropical cyclones and expanded his activities to include more general aspects of the climate and weather of Guam and all of Micronesia. Current WERI activities include participation in the Pacific ENSO Applications Center (PEAC), oversight of a network of rain gages on Guam for the Ground Water Under the Direct Influence of Surface Water (GWUDI) project, and other climate and climate change related research. Papers nearing completion include an investigation of recent sea level rise in Micronesia and a study of the differences between the tropical cyclone best track data sets of the JTWC versus the Japan Meteorological Agency (JMA).

Gil Masters

Gil Masters is an emeritus professor of environmental engineering and science at Stanford University. Although he retired several years ago, he continues to teach his courses on energy-efficient buildings and renewable energy systems as part of the graduate program in Atmosphere and Energy at Stanford. He is the author or co-author of eight books, including *Renewable and Efficient Electric Power Systems* (2004), *Introduction to Environmental Engineering and Science*, now in its third (2008) edition, and *Energy for Sustainability: Technology, Planning and Policy* (2008). His interests in Pacific Island nations dates back to the early 1960s when he had the good fortune as a graduate student to have had a summer job that took him to a number of Pacific islands, including Palau, Yap, Guam, Wake, Midway and Kauai.

Don Schregardus

Donald R. Schregardus has over 30 years of service as an environmental professional with federal and state agencies. He was appointed Deputy Assistant Secretary of the Navy (Environment) in November 2001 and reports to the Assistant Secretary of the Navy (Installations and Environment). Mr. Schregardus is the principal policy advisor on environmental programs, including conservation of natural and cultural resources, compliance with environmental laws and regulations, cleanup of contaminated sites, and marine resource protection. He also represents the Department of the Navy and coordinates for the Department of Defense Clean Air Act, Clean Water Act, and Ocean resource protection issues of importance to the services.

LT Elena Vaouli

LT Elena Vaouli of the US Public Health Service is currently detailed to the American Samoa EPA where she serves as Water Program Manager. Elena's duties include directing water quality monitoring and laboratory activities, overseeing the Territory's drinking water compliance issues, and managing the agency's highly successful and environmental award-winning Piggery Compliance Program. Additionally, Elena co-developed and managed the US Freely Associated States of Micronesia Laboratory Certification Program. Prior to her commissioning into the PHS, Elena's contributions to the AS-EPA include serving as an AmeriCorps member, Laboratory Manager, and Deputy Water Program Manager.

Kathy Yuknavage

Kathy Yuknavage has held several positions in the environmental field, including supervising DEQ's laboratory, becoming a member of the interagency Marine Monitoring Team, and supervising the Dept. of Public Health's Bureau of Environmental Health. She returned to research when offered a position at Northern Marianas College, where she studied the efficacy of biological indicators for marine water quality. She was then offered a position as the Natural Resources Planner for the Coastal Resources Management Office. In 2005 she co-founded Mariana Islands Nature Alliance (MINA), a non-profit dedicated to protect, preserve and restore the full range of habitats that sustain the islands natural biodiversity and heritage. Ms. Yuknavage is presently the Vice President of Sphere, Inc., a professional management group based on Saipan. Her volunteer time is spent acting as MINA's environmental science advisor and planner.

THINGS TO DO, SEE, AND EAT IN SAIPAN

Liberation Day Festival

Garapan Fishing Base Complex

June 5 – July 10, 2009 – 6:00 p.m. to 10:00 p.m.

The CNMI's largest community event, the Liberation Day Festival is organized by a team of volunteers under a non-profit organization. This year's celebration marks the 62nd anniversary of the day that the U.S. Armed Forces liberated the Northern Mariana Islands. The festival will showcase nightly live entertainment, queen contests, games, amusement rides and food booths as part of the celebration's activities. The annual Liberation Day Festival is scheduled to take place nightly from June 5 to July 10 and will be held at the Garapan Fishing Base Complex. For more information, please contact the Saipan Mayor's Office at (670) 234-6208.

Cook A Rainbow Challenge

Garapan Street Market

Thursday, June 25, 2009 – starting at 7 p.m.

The Cook-a-Rainbow Challenge is a cooking competition that aims to raise awareness on the importance of the land and sea as providers of food and the benefits of consuming food that is locally grown. Contestants will cook a dish that includes at least one of each of the following colors in fruits and/or vegetables: red, yellow/orange, green, purple. This year's main ingredient is locally farmed shrimp. Judging will be based on taste, creative presentation, texture, use of fresh local ingredients and originality. This year, organizers added a youth category, open to students between the ages of 10 and 17 years; and is also open to non-professional cooks.

Duty Free Shopping Shuttle – FREE

Departs the World Resort

10:18 a.m.

10:33 a.m.

11:03 a.m.

Last Departure 21:03

Departs DFS

10:30 a.m.

11:00 a.m.

11:30 a.m.

Final Return: 21:00

Dining at the World Resort:

The World Buffet

Offering 150 diverse Korean, Japanese, Chinese and Western style dishes

7:00 – 10:00 / 11:30 – 13:30 / 18:00 – 21:00

Breakfast and Lunch, \$15.00 per person;
Dinner, \$20.00 per person

Myung Ga

Upscale Korean Restaurant

11:30 – 14:00 / 18:00 – 21:30

Lunch Buffet, \$15.00 per person

Red Box

799 Rush Hour, Monday –

Friday, 11:00 – 13:30

Soup, Salad & Pasta for \$7.99 per person

Limited Seating

Night Entertainment Spot with Karaoke (17:00 – 02:00)

Pepe Italian Restaurant

Dinner only (18:00 – 21:00)
(Located inside the World Buffet entrance)