Abstract

The Virgin Islands Water Resources Research Institute will collaborate with other water resources research institutes in the National Institutes for Water Resources' Islands Region to convene a conference in Honolulu, Hawaii during November 2011. The conference will provide a platform for discussion between water resources researchers and others on existing water resources issues facing tropical islands and those issues that are likely to develop in the future particularly due to the anticipated changes in climate.
ISLANDS’ INSTITUTES WATER CONFERENCE

Statement of Critical Regional or State Water Problem

Island states are faced with a unique set of environmental and cultural issues pertinent to the management of water resources. Fresh water resources are under threat on many islands both from overuse and contamination. Ocean waters in these tropical regions are ecologically sensitive and valuable, and similarly threatened by overuse and pollution. On some islands climate-induced sea level rise and associated increases in storm surge magnitude are degrading groundwater resources. Many island states have been experiencing climate-change based alterations of precipitation patterns resulting in floods and droughts. Sustainable management and protection of island water supplies is even more critical than it is on the continents, as island communities have no recourse to importation in the event of a failure of their water supplies. Island states are heavily dependent on importing essentials such as food, fuel, and manufactured goods to satisfy their resource needs. On most of these islands population growth is putting increasing pressure on water resources. It is imperative that these threats to the welfare of island communities be addressed by sound scientific research before they reach crisis proportions. Those tasked with resource protection and management need access to scientifically sound research that is specific to island environments.

The above issues are universal to island states yet researchers in these far flung and isolated places seldom have opportunity to share knowledge and experience with one another. They work largely in isolation. The great distances that separate most island states from larger centers of academia and government means that there is less frequent exchange between researchers on the islands and their colleagues in the major population centers. Enhanced communication and collaboration between island researchers can provide a vital, synergistic link which will strengthen all the researchers programs. It is a truism that the greatest scientific advances usually result from the collaboration of groups of researchers working together.

There are four island-based research centers within the USGS State Water Resources Institutes and the National Institutes for Water Resources (NIWR). They form the “Islands Region” of NIWR and are the Water Resources Research Center (WRRC) in Honolulu, Hawaii, the Water and Environmental Research Institute (WERI) of the Western Pacific in Mangilao, Guam, the Puerto Rico Water Resources and Environmental Research Institute (WRERI) in Mayaguez, Puerto Rico and the Virgin Islands Water Resources Research Institute (WRRI) in St. Thomas, U. S. Virgin Islands. These units are referred to within NIWR as the “Island Institutes”. Each Institute addresses similar issues within its region and yet communication between the Institutes is infrequent and difficult due to physical distances and time differences. In addition to the Island Institutes, there are several other water research initiatives in non-US islands such as Samoa, Fiji, Tonga, and Palau in the Pacific and in several of the islands of the Caribbean which face similar kinds of water problems and issues that the US researcher work on. The Island Institutes propose to organize an intensive three-day meeting in Honolulu, Hawaii of representatives from water research institutes on islands, both US and non-US, as an opportunity
to share information about research being conducted, research needs perceived, and to plan for collaboration on future research that will address common problems and issues.

Statement of Results or Benefits

The intent of the conference is to create a synergism between the researchers from the various far flung island states to develop solutions and ideas on water resources issues that are particularly relevant in the setting of tropical islands. Through the conference, collaborative projects will be developed, new perspectives obtained and hopefully joint solutions created to common problems. This will be first conference ever convened jointly by the Island Institutes.

Nature, Scope, and Objectives of the Project

The projected growth in population on tropical islands will add further stress to these islands in regard to water supply, wastewater disposal, management of solid wastes, and meeting energy needs. For example, Oahu, the most populous island on the Hawaiian archipelago is predicted to experience significant population growth over the coming decades and this increased population will require more fresh water and energy and need more space for the disposal of wastes. Oahu will have to find an alternative to the present practice of releasing wastewater into the ocean after primary treatment. Anticipated problems on a decadal scale abound not only for Hawaii, but also for other island states. Thus, a common platform is needed to discuss these pressing issues and potential solutions. The objective of the conference detailed in this proposal is to provide persons concerned about island water resources issues with that platform to address water sustainability challenges facing tropical islands.

Preliminary planning for the conference is already underway. There will be detailed discussions on the conference between Directors of the Island Region at the annual NIWR meeting in Washington, DC in February 2011. Tentatively it has been decided that presenters for the conference will be decided by June 30, 2011 and the conference will take place during November 2011. This timeline will be fixed in greater detail beginning with the February Directors’ meeting and also when it is known if funding from the USGS is obtained.

Methods, Procedures, and Facilities

The conference will be hosted by the University of Hawaii and will be conducted either on the campus of the University of Hawaii or at a hotel in Honolulu depending on the number of participants and the availability of other resources. Hawaii’s WRRC will be the primary sponsor and the water centers from Guam, Puerto Rico, and the US Virgin Islands will be co-sponsors.

An advisory group will coordinate the organizing of the conference. This group will consist of the directors and selected researchers from the four centers and others with expertise on the subject. The advisory group will advise on the selection of key speakers and the detailed program of the conference, including an outcome report. The staff at Hawaii WRRC will prepare the necessary informational materials. The General Chair of the conference is expected to be the Director of the Hawaii Water Resources Research Center and other institute Directors from the Island Region will serve as conference co-chairs.
Four key speakers, national or international experts on sustainability issues related to islands, will be invited to make special presentations at the conference. In addition, leaders and experts from various island nations in the Pacific and Caribbean will be invited to attend and to make submissions of papers and posters they would like considered for presentation at the conference. Local agency leaders, university faculty members and students, representatives of Non-governmental Organizations (NGOs) and other community groups as well as members of the interested public will participate in the conference.

The conference will last for 2.5 days with a plenary session on the first day where two of the four key speakers will make presentations on water resources challenges faced by islands. The other key speakers will speak in the subsequent sessions. Ample time will be made available for discussions between the speakers and other conference participants.

The following is a brief outline of the tentative agenda for the conference.

**DAY ONE: OVERVIEW OF ISLAND SUSTAINABILITY CHALLENGES**

- Morning Session
  - Registration and continental breakfast
  - Plenary session: Speaker 1
  - Plenary session: Speaker 2
  - Plenary session: Panel
- Lunch Speaker: Water sustainability challenges for the Hawaiian Islands
- Afternoon Session
  - Keynote speech: Speaker 1 (Water Challenges)
  - Individual speakers from various island states
  - Question-answer session (from audience)

**DAY TWO: SUSTAINABILITY CHALLENGES AND POTENTIAL SOLUTIONS**

- Morning Session
  - Keynote speech: Speaker 2 (Waste Management)
  - Individual presentations
- Lunch Speaker: Development challenges for Guam and other islands
- Afternoon Session
  - Invited Speaker: Island Country 1
  - Individual speakers
  - Question-answer session (from audience)

**DAY THREE: SUSTAINABILITY CHALLENGES AND POTENTIAL SOLUTIONS**

- Morning Session
  - Invited Speaker: Island Country 2
- Panel for potential solutions
- Future action plans
- Revisiting the outcome of the conference
- Formal Adjournment

- Field trips to local military bases for interested participants

A book of abstracts will be prepared for distribution at the conference. Selected authors will be invited to submit manuscripts that conduct in-depth analyses of problems and offer potential solutions. A book will be prepared from these manuscripts and current plans are that an appropriate printer/publisher will be found for this work.

**Related Projects**

The Virgin Islands Water Resources Research Institute in collaboration with the Puerto Rico Water Resources and Environmental Research Institute, and U. S. Geological Survey in Puerto and others cosponsored the 8th Caribbean Islands Water Resources Congress during August 30 to September 1, 2010 in Puerto Rico. These Congresses were started and have been cosponsored by VI-WRRI, PR WRERI and the USGS since 1984. The VI-WRRI was a co-sponsor of the 18th annual conference of the Caribbean Water and Wastewater Association which was held in St. Thomas during October 4 – 10, 2009. The VI-WRRI then is highly experienced in organizing these events that involve bring participants from across island regions and is very familiar with island water resources issues.

**Training**

The conference will be taking place in Honolulu, Hawaii and most of the preparation activities will be done by staff of the Water Resources Research Center (WRRC) in Honolulu. Student training through participation in preparation for the conference then will not take place in the U. S. Virgin Islands. The conference though will openly invite and encourage students to actively participate in the conference and if possible present papers and posters.

**Investigator Qualifications**

See H. Smith’s resume below.
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Education

J.D.  Law - concentration in Environmental Law, University of Dayton, Dayton, Ohio, 1993.


M.S.  Civil Engineering with emphasis in Environmental Engineering and Water Resources, University of Maryland, College Park, Maryland, 1977.


Experience

October 2010 - Present:  Acting Director, Virgin Islands Experimental Program to Stimulate Competitive Research, University of the Virgin Islands, U. S. Virgin Islands.

June 2008 – September 2010:  Interim Vice President of Institutional Advancement, University of the Virgin Islands, U. S. Virgin Islands.


August 1997 – September 1999:  Director, Eastern Caribbean Center, University of the Virgin Islands, St. Thomas, U. S. Virgin Islands.

November 1993 – Present:  Director, Water Resources Research Institute, University of the Virgin Islands, St. Thomas, U. S. Virgin Islands.

November 1993 – July 1994:  Associate Director, Eastern Caribbean Center, University of the Virgin Islands, St. Thomas, U. S. Virgin Islands.
April 1987 – August 1990: Director and Associate Professor, International Center for Water Resources Management, Central State University, Wilberforce, Ohio.

Selected Publications


Smith, H. H. (Editor), 2000, Proceedings of the Fifth Annual Virgin Islands Nonpoint Source Pollution Conference – A Commitment to Clean Water, V. I. Department of Planning and Natural Resources, St. Thomas, USVI.

Selected Presentations


“Onsite Sewage Disposal in the U. S. Virgin Islands”, Third Annual Virgin Islands Non-Point Pollution Conference, St. Thomas, U. S. Virgin Islands, October 1996.
