USGS Water Programs and the Water Resources Research Institutes

2nd Conference on Water Resource Sustainability Issues on Tropical Islands

Earl Greene, USGS, Chief of External Research

1-3 December 2015
Honolulu, HI
Water Mission Area — one of 7 Mission Areas

- Observations
- Assessments
- Research
- Information Delivery

Facing Tomorrow’s Challenges, USGS Science in the Decade 2007—2017, Circular 1309
Water Mission Area - Programs

- Water Availability and Use Science
- National Water Quality
- Groundwater and Streamflow Information
- Water Resources Research Institutes
USGS Water Science in the Caribbean and Pacific Islands

Cueva Venta, Puerto Rico

Waipo’o Falls, Kauai, Hawaii
Provide information to manage, protect, and enhance water resources

Address water-related hazards

Non-regulatory role

Provide actionable information that is reliable, impartial, and timely
# USGS Pacific Islands and Caribbean WSC - Core Capabilities

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USGS Pacific Islands & Caribbean WSCs – Focus Areas

- Groundwater availability
- Quantity and variability of streamflow
- Water quality related to land use
- Climate variability and change
USGS Pacific Islands & Caribbean WSCs – Hydrologic Data Collection Program

- USGS has been collecting hydrologic data in Hawaii since the 1900s and in Guam since the 1950s, PR since the early 1960s
  - Flood-alert sites to help protect life and property
  - Peak-streamflow sites to assess flood hazards
  - Reference sites to assess effects of climate change
  - Water-resource management sites to understand effects of land- and water-use change

- Funded in cooperation with Federal, State and Local agencies
Opportunities for Collaboration

- Apply geophysical methods to understand subsurface geology
- Estimate ET and runoff for a variety of native and non-native vegetation
- Estimate groundwater recharge using independent methods
- Develop approaches to relate land-cover and climate-change factors to hydrological components
- Develop innovative numerical methods that results in faster groundwater flow and solute transport modeling codes
- Access to faster computers to undertake formal optimization techniques to assess groundwater availability
Water Resources Research Institute Program

Federal-State Partnership:
• Conducts applied & basic research to solve water resource issues
• Technology transfer and dissemination
• Train the next generation of scientists and engineers

Network of 54 University Institutes
Water Resources Research Institute Program

• Annual Base Grants
  • Research to assist states in solving hydrologic issues
  • Provide training to students through research

• National Competitive Grants
  • Regional and National hydrologic issues
  • Collaboration with USGS Scientists

• Coordination Grants
  • Opportunity to use the expertise of University Faculty and students
  • USGS and other federal agencies

• Student Interns
Questions?