

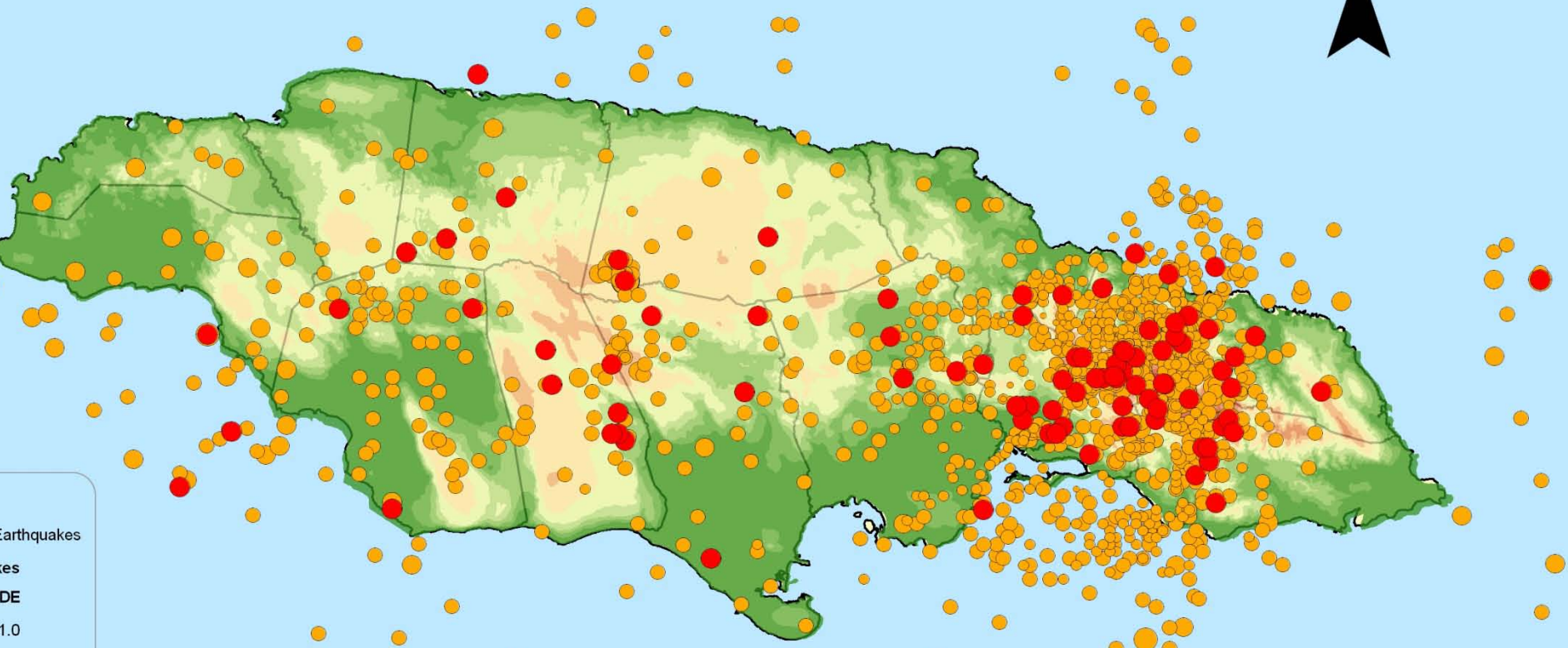
# JAMAICA: SEISMIC RESEARCH

**THE EARTHQUAKE UNIT,  
UNIVERSITY OF THE WEST INDIES, MONA**



**Lyndon Brown, Head/Research Fellow**

# Local Region Seismicity 1998 to 2010



Earthquakes  
Magnitude  
1.0  
2.0  
3.0  
4.0  
5.0  
6.0

Scale Unit  
km, m, A



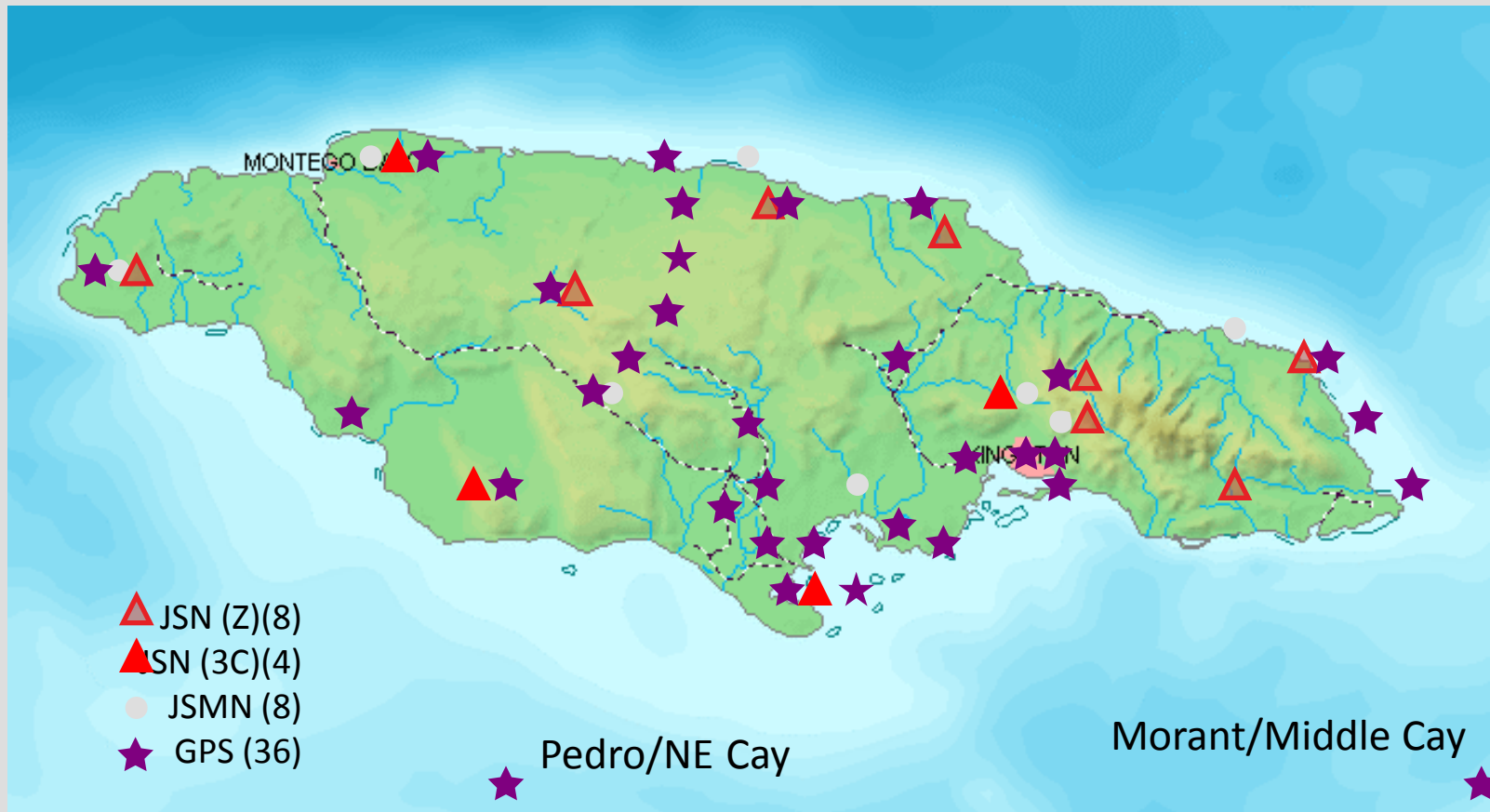
## MISSION STATEMENT

*Through operating the Jamaica Seismograph Network and affiliating with other Caribbean and Regional Networks the Earthquake Unit seeks to understand earthquake processes in and around Jamaica and advise the society about earthquake hazard thereby encouraging community awareness and the application of mitigative strategies to development.*

# WORK OF EARTHQUAKE UNIT

- The Unit operates the Jamaica Seismograph Network, Jamaica Strong Motion Network and the GPS Monitoring Network.
- Archives and records all earthquake related data for Jamaica.
- Collaborates/Conducts research on Jamaica seismicity and tectonics.
- Performs national and site specific seismic hazard assessment for national and private entities. Informs the public about felt earthquake
- Operates the National Data Centre (NDC) for Jamaica in keeping with the CTBTO
- Hosts tours by schools and other community groups at the Central Recording Station

# SEISMIC MONITORING IN JAMAICA



## STAFF AT THE EARTHQUAKE UNIT

### 6 full-time staff:

- Research Fellow/Geophysicists
- Engineer/Network Manager
- Seismic Analyst
- Information/Electronics Technologist
- Scientific Officer – Education & Information
- Administrative Secretary

Plus

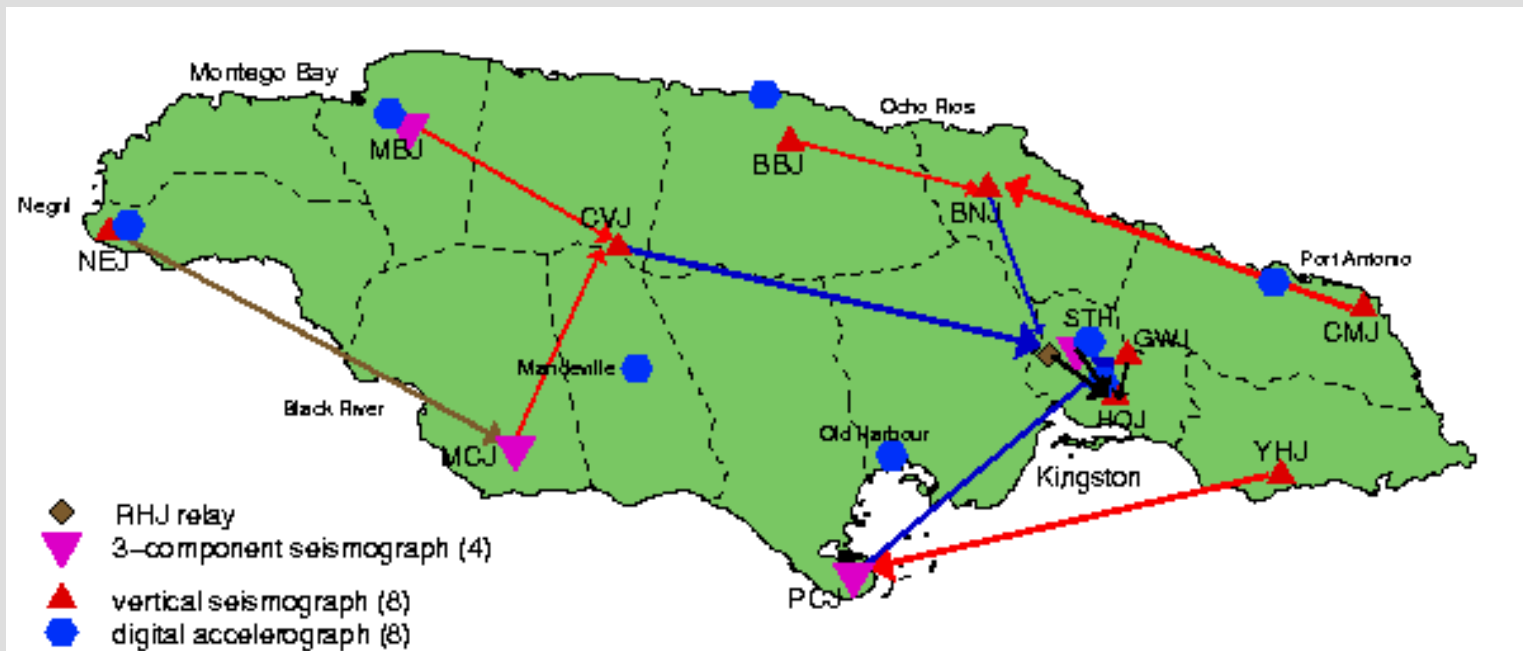
One Postgraduate student- serves as GIS staff

BUDGET FOR 2010-\$US300, 000-

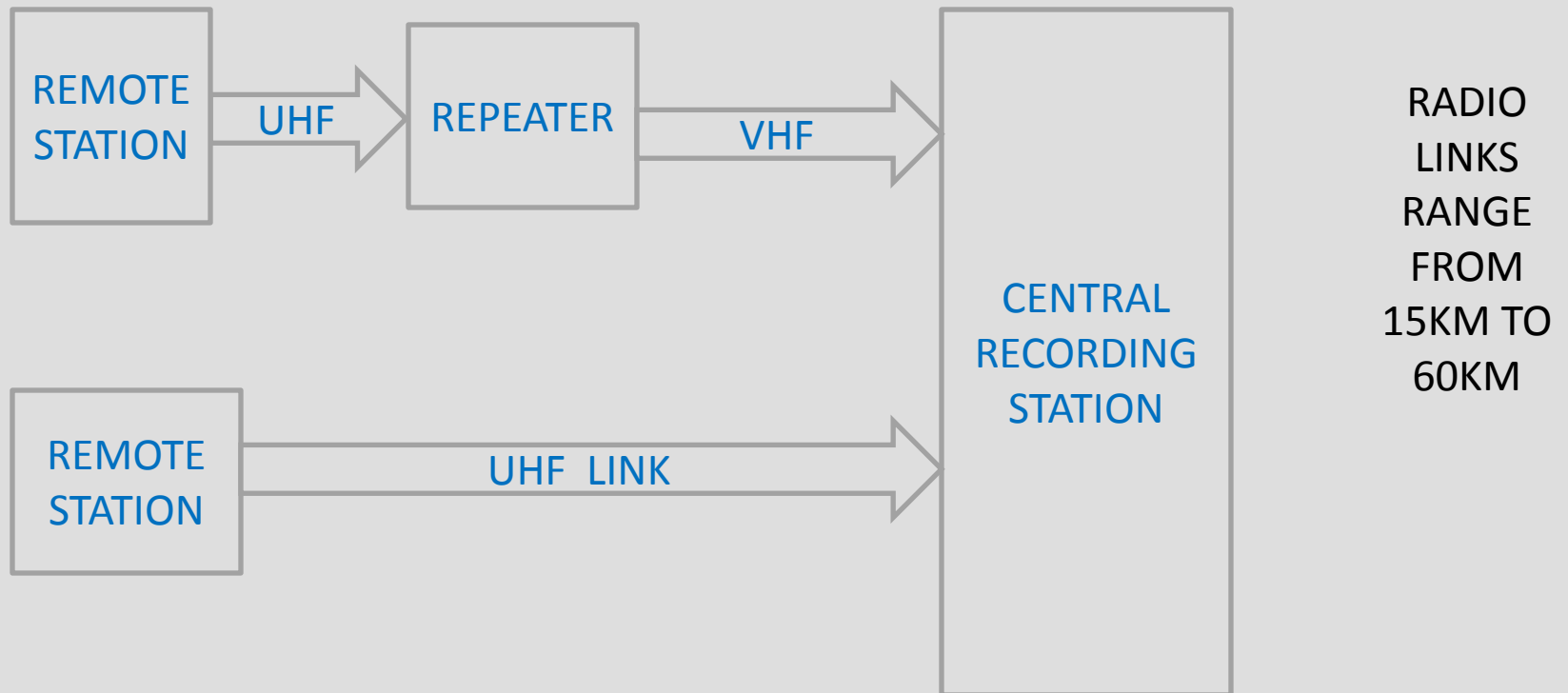
92% of GRANT –STAFF SALARIES

# THE JAMAICA SEISMOGRAPH NETWORK

- The Jamaica Seismic Network consists of 12 analog short period stations.
- There are four 3-component and 8 single vertical component station
- The JSN is a telemetry network using UHF and VHF radios.
- The station are mostly powered by solar power.



# JAMAICA TELEMETRY SEISMIC NETWORK





# STAFF TRAINING

## Training- Opportunities in Jamaica

Geology major – PhD at UWI

Geophysics not taught as a full course- at undergraduate level

No seismology course is taught.

Currently the one graduate student has a major in geology and minor in physics.

Training course – accessed through CTBTO and IRIS, and other agencies USGS- members of staff have made use of these opportunities

Currently one staff member is pursuing a Masters degree in Seismology in Japan under the Japan International Cooperative Agency (JICA)

## USE OF SEISMOLOGICAL INFORMATION

- Provides bulletins to the Office of Disaster Preparedness and Emergency Management (ODPEM), Media
- Corroborate with the Jamaica Institute of Engineers with spectral acceleration and hazard modeling data used to improve Building Code.
- Provide information to insurance companies regarding earthquake activity
- Site specific assessment for private and public building projects

## CONCERNS AND GOALS FOR THE FUTURE

### TRAINING

Ability of unit to move forward- advance in terms of information that is vital for development and science- funding of equipment, new staff with appropriate expertise-difficulty in funding new staff, or getting staff to utilize opportunities that may exist outside of country- security of job

-Family responsibilities to travel outside of Jamaica to pursue courses to advance work of unit- not willing to partake in extended programme outside of country.

### COLLABORATION

-Position of Jamaica in relation to regional tectonics- Haiti, Cayman Islands

-Funding – understand role of seismological studies to national development

-Researchers- Invite researchers on sabbatical leave- work on information locally

## **EQUIPMENT**

-Improved seismic microzonation - accelorograph network in major towns , Acquire more geophysical equipment- seismic refraction – better determine shear wave velocity of sediments and better constraints on shallow subsurface geology.



**THE END**