



## Professional Personnel Profile

### **Todd Anthony Bosse**

Senior Geospatial Information Analyst  
University of Hawaii: Pacific Disaster Center (PDC)

Todd Bosse  
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DOB: 20 February 1978  
U. S. Citizen

### **Qualifications and Experience**

Mr. Bosse has experience working with Geographic Information Systems (GIS) in a variety of national and international settings. In his current position, Mr. Bosse provides GIS support for disaster management projects by serving as project lead and technical resource at Pacific Disaster Center (PDC). In recent years, he has been participating with a team that has travelled extensively throughout the Pacific providing lectures on the use of GIS for emergency management for the Pacific Islands. The project also involves creation of a GIS database and internet accessible map viewer for each of the islands in the project, an undertaking that may be expanded to the entire Pacific basin.

At PDC, Mr. Bosse has helped to design and manage PDC's Enterprise Geospatial Database (EGDb) by processing and integrating new data, updating legacy data, and migrating all data, complete with fully compliant metadata, to an Oracle/ArcSDE environment. Through this work he has become an expert in geospatial data organization, an essential component of any successful GIS program, and in the role of GIS in the fields of disaster management/emergency response. Mr. Bosse has also been a user of PDC GIS data, utilizing software to create GIS/Imagery products for PDC and external clients.

As one of the best ways to prepare for a disaster is to engage in exercises, Mr. Bosse has traveled overseas to support numerous international disaster management exercises. Typical support he provides to an exercise includes scenario development, creating GIS mapping products visualizing the disaster and impacts, providing expert briefings on GIS for Crisis Management, Risk and Vulnerability, and providing subject-matter expert support during the scenario. These exercises range from small local events to large multi-national emergencies involving civil-military coordination and international response agencies. These events have prepared Mr. Bosse for , providing support to real life disaster events.

Deployed to the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA) Regional Office for Asia and the Pacific (ROAP), Mr. Bosse provided technical GIS/Imagery mapping support during the Myanmar (Burma) Tropical Cyclone Nargis Disaster in 2008 as part of the UN's Humanitarian Information Center (HIC). He was also deployed to the affected area of the Indian Ocean Tsunami in 2004 to support the local Thailand Disaster Management Agency. The combination of these deployments, and local Hawaii events, have given Mr. Bosse experience in working with and supporting large international agencies, such as the UN, and small local agencies in times of crisis.

Mr. Bosse has been a contributing author to many technical documents including training manuals, professional papers and presentations relevant to GIS applications. As a participant in numerous conferences and workshops with topics covering Geographic Information Systems, Emergency/Disaster Management, and Homeland Security, he has been involved in presenting papers and conducting training, often in foreign countries. (See "Select Publications and Presentations" and "Support" sections below for more information.)

## Countries of Work Experience

American Samoa	Bangladesh	Cambodia
Comm. of No. Mariana Islands	Fed. States of Micronesia	
Fiji	India	Indonesia
Lao PDR	Malaysia	Marshall Islands
Palau	Philippines	Singapore
Solomon Islands	Taiwan	Thailand
United States	Vanuatu	Vietnam

## Language Skills and Foreign Travel

English: Excellent, native speaker

Travel: Extensive throughout Asia/Asia Pacific, Pacific Island Countries and elsewhere, including Australia, Canada, Cayman Islands, Japan, Mexico, New Zealand.

## Education

Bowling Green University	BS	2001	Environmental Science and Geographic Information Systems/Mapping. Minor in Biology
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## Other Training

2009	Damage Assessment and Needs Analysis Training
2009	Humanitarian Assistance and Disaster Relief: Geospatial Intelligence
2008	International Training Workshop for Typhoon and Flood Disaster Reduction
2003	Customizing ArcIMS Using ArcXML
2003	Advanced ERDAS Imagine
2002	Introduction To ArcIMS 4.0
2002	Working With Rasters in ArcGIS
2002	Customizing ArcPad with Application Builder
2001	Introduction To ERDAS Imagine
2001	Introduction to ArcGIS II
2001	Independent Study: GIS Development for Park Management
2001	Migrating from ArcView 3 to ArcView 8.1

## Computer and IT Skills

**Software:** Microsoft Windows, Windows CE, Macintosh OS, UNIX (IRIX), ArcGIS ArcInfo & Extensions, ArcInfo Workstation, ArcSDE, ArcIMS, ERDAS IMAGINE, Trimble Pathfinder Office, Trimble Media Mapper, TOPO! Image Support for ArcGIS, AutoCAD 2000 Map, ArcPad Studio with Application Builder, Trimble TerraSync Professional, Adobe Photoshop, Windows Office Suite.

**GPS Units and Field Computers:** Trimble Geo Explorer I, II, III, CE, and 2005 Series, Trimble Pro XR/XRS, Garmin GPS III and eTrex, Juniper Systems Allegro Field PC with GPS receiver, IKE GPS, Compaq iPAQ Pocket PC with Trimble GPS Pathfinder Pocket. GPS to GIS data conversion.

## Select Honors

2005	ESRI Special Achievement in GIS Award Winner
2000	Bowling Green State University Outdoor T.R.E.Q., Organization President

## Professional Associations

2004– present     Hawaii Geographic Information Coordinating Council (HIGICC)

## Employment History

12/06–Present	Senior Geospatial Information Analyst	Pacific Disaster Center Managed by University of Hawaii
05/05–12/06	Project Specialist	Pacific Disaster Center Managed by East-West Center
10/03– 05/05	Project Analyst	Pacific Disaster Center Managed by East-West Center
10/02– 10/03	Intern/GIS Analyst	Pacific Disaster Center (Environmental Careers Org.)
06/01– 10/02	GIS/GPS Specialist Global Positioning System (GPS)	U.S. Bureau of Land Management Twin Falls, Idaho

## Select Publications and Presentations

*Mapping for Disaster Management*, coauthor, course manuals for Vietnam's Natural Disaster Risk Management Project Education and Training Program. Pacific Disaster Center and Vietnam Ministry of Agriculture and Rural Development, Hanoi, Vietnam, March 2010.

The Pacific Disaster Center's Comprehensive Response to the Indian Ocean Tsunami; Regional Natural Hazards Overview – Asia Pacific; Disaster Information: Sources, Organizations and Websites; and "Risk & Vulnerability Assessment (RVA) Process: Assessment Methodology and Examples, four presentations at the Humanitarian Assistance and Disaster Relief: Geospatial Intelligence Training Course (HADR GEOINT) hosted by the National Geospatial Intelligence Agency (NGA), Honolulu, Hawaii, July 2009.

Regional Disaster Overview, a presentation at the Tempest Express 16 (TE-16) Staff Planning Workshop, co-hosted by the Government of the Republic of the Philippines (GRP), Armed Forces of the Philippines (AFP), and U.S. Pacific Command (PACOM) Multinational Planning Augmentation Team (MPAT), Manila, Philippines, March 2009.

"The Asia Pacific Natural Hazards Information Network," in *Proceedings of Pacific Islands GIS/RS Users Conference*, University of the South Pacific, Suva, Fiji Islands, December 2008.

"Flood Surveillance and Early Warning in Phu Tho Province Vietnam" in *Proceedings of GIS IDEAS 2008*, Japan-Vietnam Geoinformatics (JVGC) and Hanoi University of Mining and Geology; Hanoi, Vietnam, December 2008; contributing author with U.S. and Vietnamese authors.

*Bangladesh Disaster Preparedness Mitigation Assessment (DPMA)*, United States Army, Pacific Command (USARPAC), United States Pacific Command (PACOM) headquarters and Dhaka, Bangladesh, October 2008.

The Asia Pacific Natural Hazards Information Network, a presentation at the 2008 ASIAES International Workshop, sponsored by the Geo-Informatics Space Technology Development Agency (GISTDA), Bangkok, Thailand, August 2008.

Geographic Information Systems (GIS) as an Information Sharing Tool Supporting Regional Disaster Risk Reduction, a presentation at the Information Sharing for Crisis Resiliency – Beyond Response and Recovery Workshop, Honolulu, Hawaii, July 2008.

The All-Hazards Decision Support System and Data Collection Program, a series of presentations for the Joint Task Force–Homeland Defense Subject Matter Expert

Exchange (SMEE) and Table-Top Exercise on No-Notice Mass Casualty Disaster and Interoperable Communications. Performed in the following Pacific Island Nations:

Yap, Federated States of Micronesia	April 2009
Chuuk, Federated States of Micronesia	February, 2009
Kosrae, Federated States of Micronesia	February, 2009
Guam	January 2009
Palau	September/October 2008
Majuro, Marshall Islands	September 2008
Tinian, Comm. of No. Mariana Islands	August 2008
Saipan, Comm. of No. Mariana Islands	June 2008

Geospatial Technologies in Support of Disaster Risk Reduction in the Asia Pacific, a presentation at the International Training Symposium for Typhoon and Flood Disaster Risk Reduction, Taipei, Taiwan, May 2008.

Information Sharing Strategies & Applications Supporting Regional Disaster Risk Reduction, a presentation at the India-U.S. Disaster Relief Working Group (DRWG) Meeting & Table Top Exercise, organized by U.S. Pacific Command (PACOM) Multinational Planning Augmentation Team (MPAT), Camp H.M. Smith, Hawaii, April 2008.

Regional Disaster Overview; and Effects of Disaster: Geophysical and Infrastructure, a presentation at the Tempest Express 14 (TE-14) Staff Planning Workshop, co-hosted by the Royal Government of Cambodia, Royal Cambodian Armed Forces, and U.S. Pacific Command (PACOM) Multinational Planning Augmentation Team (MPAT), Phnom Penh, Cambodia, March 2008.

Vietnam Hazards and Vulnerabilities Atlas Training Workshop, at the International "Best Practices" in Disaster Management: Disaster Risk Assessment and Early Warning Systems, Hanoi, Vietnam, November 2007.

Rationale for Disaster Risk Reduction: Hawaii Natural Hazards and Vulnerabilities Atlas, a presentation at the Asia Pacific Center for Security Studies, Honolulu, Hawaii, October 2007.

Pacific Disaster Center (PDC) Capabilities Supporting Regional Disaster Reduction, a presentation at the India-U.S. Disaster Relief Initiative (DRI), Disaster Relief Working Group (DRWG), New Delhi, India, August 2007.

The Application of Geospatial Technologies for Disaster Management, a series of presentations for the Joint Task Force–Homeland Defense Airport Disaster Mobile Training Team Initial Capabilities Seminar and Table-Top Exercise. Performed in the following Pacific Island Nations:

Kwajalein	September 2007
Yap, Federated States of Micronesia	August 2007
Palau	July 2007
American Samoa	July 2007

Indonesia Hazards Assessment Brief, Risk and Vulnerability Assessment (RVA): Methodology and Examples, and Risk Assessment Work Group: Hands On Exercise, at the Disaster Management Exchange and Exercise (DME) hosted by the Government of Indonesia and Indonesian military (TNI) with United States Army, Pacific Command (USARPAC) and U.S. Air Force Pacific (PACAF), Pelabuhan Ratu, Sukabumi, Indonesia, June 2007.

Technology in Support of Regional Disaster Risk Reduction, at the Disaster Management Workshop (DMW) hosted by the Government of Indonesia, including the Indonesian military (TNI) and BAKORNAS PB in conjunction with the Center of Excellence in Disaster Management and Humanitarian Assistance (COE) with the support of the United Nations through the UN Technical Working Group (UNTWG), Jakarta, Indonesia, June 2007.

Implementation of the Asia Pacific Natural Hazards Information Network (APNHIN), a presentation at the Hawaii Conference of Planning Officials/ Pacific Geospatial Conference (HCPO/PACGEO), Honolulu, Hawaii, October 2006.

Pacific Disaster Center Support to Hawai'i During Unprecedented Severe Weather, a presentation at the Hawaii Congress of Planning Officials/ Pacific Geospatial Conference (HCPO/PACGEO), Honolulu, Hawaii, October 2006.

Metropolitan Manila Map Viewer Training Workshop, hosted by the Emergency Management Institute of the Philippines, National Defense College of the Philippines, Camp Aguinaldo, Manila, Philippines, May 2006.

PDC Map Viewer Support for Emergency Management, a presentation at the Hawaii Emergency Preparedness Executive Committee (HEPEC) Meeting, Ft. Shafter, Hawaii, March 2006.

Hawaii Critical Infrastructure Map Viewer, a training workshop for Hawaii State Civil Defense, February 2006.

Hawaii Natural Hazards and Vulnerabilities Atlas Training Workshop, performed for the following organizations:

U.S. Pacific Command – Joint Operations Ctr.	May 2006
Maui Civil Defense	May 2006
Hawaii Civil Defense	May 2006
Kauai Civil Defense	May 2006
Oahu Civil Defense	May 2006
Hawaii State Civil Defense	December 2005

The Asia Pacific Natural Hazards Information Network, a presentation at the ESRI International Users Conference, San Diego, California, July 2005.

Introduction to GIS as a Risk Reduction Tool, and Internet Map Viewer Exercises, at the Building the Foundation Program – Leadership Seminar for Pacific Island Power Utility Managers: Disaster Risk Reduction Strategies for Building More Resilient Communities, East-West Center, Honolulu, Hawaii, April 2005.

*Information & Communication Technology Assessment for the ASEAN Disaster Information Sharing and Communication Network (ASEAN DISCNet)*, Pacific Disaster Center and Secretariat of the Association of Southeast Asian Nations (ASEAN), 2005. Separate presentations were done for each ASEAN Member Nation and the ASEAN Secretariat.

"Assessing and Reducing the Impacts of Disasters in the Asia Pacific Region," coauthor, in Proceedings, First International Conference on Urban Disaster Reduction, Kobe, Japan, January 2005.

Marikina City Internet Map Viewer, a training workshop, hosted by the Emergency Management Institute of the Philippines, National Defense College of the Philippines, Camp Aguinaldo, Manila, Philippines, November 2004.

Introduction to GIS as a Risk Reduction Tool, and Internet Map Viewer Exercises, at the Building the Foundation Program – Leadership Seminar for Pacific Island Disaster Managers: Disaster Risk Reduction for Sustainable Island Development: Building Safer and More Sustainable Communities, East-West Center, Honolulu, Hawaii, October 2004.

Hawaii County Remote Information Service (HCRIS), a training workshop for over 40 county support staff on the Big Island, including: county police, fire, civil defense, planning, research and development, and public works, Hilo, Hawaii, June 2004.

Protecting Hawaii's Critical Infrastructures Using Geospatial Technologies, a presentation at the GISMAP Conference, Honolulu, Hawaii, June 2004.

Asia Pacific Natural Hazards Information Network (APNHIN) Implementation Two-day Workshop, hosted by Geo-Informatics and Space Technology Development Agency (GISTDA), Bangkok, Thailand, May 2004.

*Multi-hazard Urban Risk Assessment for Marikina City, Philippines: Guidelines for Implementing Multi-hazard Risk Reduction Strategies for an Urban Environment*, contributor, Pacific Disaster Center, Kihei, Hawaii, 2004.

## **Support**

Exercise: Typhoon Pakyo Full Scale Exercise, part of a PDC-Joint Task Force–Homeland Defense support team for a typhoon event exercise organized by Joint Task Force–Homeland Defense, Guam Homeland Security, and Joint Region Marianas, Guam, June 2009.

Disaster Preparedness Mitigation Assessment (DPMA), arranged and conducted meetings with agencies of the government of Bangladesh and with international agencies (UN) to perform an assessment of GIS use for disaster management within the country, to be included in overall project report, United States Army, Pacific Command (USARPAC), Dhaka, Bangladesh, October 2008.

Exercise: Tempest Express 15 (TE-15) Staff Planning Workshop, an exercise designed to examine the World Health Organization (WHO) Phase VI Bird Flu Pandemic framework, focusing on non-medical issues, hosted by U.S. Pacific Command (PACOM) Multinational Planning Augmentation Team (MPAT), Bali, Indonesia, August 2008.

Exercise: Disaster Response Exchange and Exercise (DREE), participated in a U.S. Pacific Command (PACOM) exercise, Padang, West Sumatra, Indonesia, July 2008.

Exercise: Tempest Express 12 (TE-12) Staff Planning Workshop, the exercise scenario revolved around a civilian and military humanitarian response to a large-scale volcanic disaster with 40-meter tsunamis and a death toll of 1.7 million, co-hosted by the Indonesian Armed Forces (TNI) and U.S. Pacific Command (PACOM) Multinational Planning Augmentation Team (MPAT), Jakarta, Indonesia, June 2007

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