

# *Curriculum Vitae*

January 2014

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## **John McKinley Hill, Ph.D.**

### ***Office Address:***

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### ***Education:***

- Ph.D.      **Biology**** (Coastal, Marine, and Terrestrial/Forest Ecology, Biology, and Land Use Management; Remote Sensing/GIS Technologies and Applications)  
Texas A&M University, College Station, Texas, August 1978
- M.S.      **Biology**** (Terrestrial, Wetland, and Aquatic Biology/Ecology; Water-Quality; and Remote Sensing)  
The American University, Washington, D.C., December 1973
- B.A.      **Biology**** (Terrestrial and Aquatic Biology/Ecology)  
Towson University, Towson, Maryland, June 1971

### ***Professional Experience:***

**Sam Houston State University**

**Office of Research and Sponsored Programs**

***Director of Collaborative Programs***

**2011-Present**

Participate in policy formation and in determining the directions for research at Sam Houston State University, particularly in association with the Texas State University System (TSUS). Work with faculty members, deans, and senior administrators to provide leadership through the development and organization of collaborative research initiatives such as: TSUS Institute for the Study of Invasive Species [ISIS]; proposed campus-wide Geoinformatics Research Center; proposed Emergency/Disaster Management Center; collaboration with the Texas Military Forces (TXMF) to help address such areas as: GIS support, energy conservation, and natural resources management; and advanced GIS and remote sensing technologies applied to forensic science at SHSU's Southeast Texas Applied Forensic Science (STAFS) Facility.

**World Data Center for Biodiversity and Ecology (WDCBE)**

**Center for Biological Informatics (CBI)**

**US Geological Survey (USGS)**

***Director***

**2003-2010**

Provide the executive and scientific leadership and vision for the Center. Lead strategic planning of integrated and interdisciplinary science initiatives. Provide long-term direction, set priorities, acquire resources, and conduct reviews. Assure that Center priorities and goals stay at the forefront of national and international science priorities. Manage the program staff responsible for conducting a diverse range of biological, ecological, natural resource, and information data gathering, integration and use/application activities. Acquire and administer human, financial, material, and information services. Ensure that effective customer feedback mechanisms are in place.

The recently established (2002) World Data Center (WDC) for Biodiversity and Ecology is hosted by the US Geological Survey's (USGS) National Biological Information Infrastructure (NBII) Program for the benefit of the international scientific community and operates according to International Council of Scientific Unions (ICSU) principles and procedures for World Data Centers. Centers in the US are managed through the US Academy of Sciences. The mission statement of the WDC System is as follows: *"Data constitute the raw material of scientific understanding. The World Data Center system works to guarantee access to solar, geophysical and related environmental data. It serves the whole scientific community by assembling, scrutinizing, organizing and disseminating data and information."* Future plans include integration of the WDCBE into ICSU's new World Data System (WDS) and providing technical assistance and mentoring to the startup of the WDC for Biodiversity and Human Health (the first WDC is all of Africa).

### ***Houston Advanced Research Center (HARC)***

#### ***Director/Vice President/Senior Scientist***

#### **Environmental Program**

#### **1991-2003**

Provide the executive and scientific leadership and vision for the Environmental Program (the organization's largest staffed and funded program). Lead strategic planning of integrated and interdisciplinary research programs. Provide long-term direction, set priorities, acquire resources, and conduct reviews. Assure that the program priorities and goals stay at the forefront of state, regional, and national policies and emerging priorities. Manage the program staff responsible for conducting a diverse range of biological, natural resource, and information science projects/programs. Work with a wide-ranging customer base to establish and fund projects. Ensure that effective customer feedback mechanisms are in place. Acquire and administer human (including assignments, scheduling, reviews), financial (including budgetary review and accountability), material, and information services.

Major research activities focused on biology, biodiversity, ecology, wildlife, human-wildlife diseases, environmental and natural resource status and trends, water-quality, invasive species, informatics, and sustainable development issues. Examples of collaborative scientific programs, each requiring a high level of partnership building, included: 1) NASA sponsored National Pollution Discharge Elimination System (NPDES) Application Development Program, 2) NASA sponsored Airborne LIDAR Commercialization Program for Topographic Mapping Applications, 3) FEMA sponsored Floodplain Assessment and Management Program, 4) USGS sponsored Central Southwest/Gulf Coast Regional Node of the National Biological Information Infrastructure (NBII) Program (this collaborative scientific program includes the current high

priority needs of other DOI bureaus which are identified along with appropriate responses/implementation), and 5) Chair of the NBII Coalition. Represented HARC, the biological science community and the nation on/with science panels, advisory groups, international committees, local, state and federal agencies, the state legislature and Congress, academic institutions, corporations, public groups, NGO's, and coalitions.

Research activities included the following projects/programs:

- USGS/NBII Central Southwest/Gulf Coast Information Node (PI) - \$900,000/FY01, \$850,000 FY02, \$850,000 FY03 for total of \$2.6 million,
- NASA/Harris County Flood Control District (Co-PI) – National Pollution Discharge Elimination System (NPDES) Application Development- \$1 million for 2 years,
- NASA and industry (TerraPoint, LLC) funded research, development, and commercialization of airborne LIDAR technology for topographic applications - \$2M from NASA and \$5M from industry for a total of \$7M.
- Total R&D Funding while at HARC – Approximately \$19M over 13 years (1991-2003).

***Texas A&M University, Geography Department***

**Adjunct Professor (Graduate Faculty)**

**1991- 1997**

Provide leadership (mentoring) in the planning of graduate student research programs; help set priorities and review thesis and dissertation research. Conduct departmental lectures on the state-of-the-science application of geospatial/informatics technologies in support of environmental and natural resource decision making.

***Louisiana State University (LSU), College of Engineering***

**Associate Professor (Tenured); Department of Civil Engineering**

**Associate Director, Remote Sensing and Image Processing Laboratory (RSIP);**

**College of Engineering.**

**1979-1991**

Provide leadership for developing and achieving an integrated biological, natural resources, and informatics science research vision for the Remote Sensing and Image Processing Laboratory (RSIP) and supported the teaching goals of the University. Designed, planned, conducted, and managed interdisciplinary research and development projects/programs and academic initiatives. Lead strategic planning of research programs and education curriculum; forecast future directions of biological science and technologies; set priorities; and conducted program reviews. Research programs focused on forest/wetland ecology, status and trends, water-quality, informatics, and sustainable development issues. Provided leadership (mentoring) in the planning of graduate student research programs; set priorities and reviewed thesis and dissertation research. Acquired and administered human, financial, material, and information services. Consulted with internal and external partners and constituents to ensure that research programs reflected their priority concerns and supported biological natural science decision making. Wrote and/or reviewed technical documents (i.e., research proposals, reports, marketing materials, journal articles, etc.).

Major research programs included: 1) Co-Principal Investigator (PI) of the USGS and industry sponsored Coastal Resources Trends and Status Project, 2) PI of the NASA sponsored

International Spatial Analysis and Modeling System (SAMS), 3) PI of the USGS sponsored Rice Irrigation Water Resources Utilization Program, 4) PI of the Louisiana Department of Environmental Quality (DEQ) sponsored Geographic Information System (GIS) Demonstration project, and 5) PI and/or researcher of the Louisiana Department of Natural Resources (DNR), USGS, and MMS sponsored Applications of GIS to Coastal Zone Management Program. Represented the organization (research laboratory and academic department) with other university research and academic departments/groups/programs; science panels; local, state, and federal agencies; state legislature and Congress; other academic institutions; corporations; partners; clients; public groups; and NGO's.

***Environmental Protection Agency (EPA), Headquarters and Environmental Monitoring and Support Laboratory (EMSL), Las Vegas, Nevada***

**Research Biologist (Intergovernmental Personnel Act [IPA] Appointment) and Environmental Specialist**

**1976-1978**

Member of a project team responsible for the coordination, review, and evaluation of joint EPA and NASA research programs focused on the development of satellite generated remote sensing and image processing capabilities to support national environmental and natural resource status and trend assessments. The goal was to provide new technology and analysis tools to assist resource managers and policy makers in decision making. Designed and implemented beta tests for remote sensing, image processing, and GIS technology analysis systems for environmental research, monitoring, and regulatory applications. Conducted research that was focused on the analysis and prediction of land use/land cover, water quality, environmental, and natural resource status and trends (with an emphasis on forest, wetland, and coastal ecosystems).

***Texas A&M University (TAMU), College of Engineering***

**Research Associate and Chief Scientist 1973-**

**1978**

Member of a team that provided leadership for creating and achieving the biological, natural resources, and informatics science research vision of the Remote Sensing Center (RSC). Lead in strategic planning of research programs that were focused on biology, biodiversity, ecology, forestry, oceanography, status and trends, water-quality, and sustainable development issues. Acquired and administered human, financial, material, and information services. Consulted with internal and external partners and constituents to provide advisory services, develop collaborative scientific programs, formulate partnerships, and to advance the general communication and understanding of the RSC and its capabilities to support biological and natural sciences decision making. Wrote and/or reviewed technical documents. Designed, planned, conducted, and managed research and development projects.

Integrated and interdisciplinary research projects included: 1) Chief Scientist of the EPA, NOAA, and NASA sponsored Ocean Color Experiment Program aboard Jacques Cousteau's RV Calypso and 2) environmental monitoring of the status and trends of forestry activities with respect to estuarine water quality and associated decision making. Participated in the Undersea World of Jacques Cousteau's television special entitled "The Sleeping Sharks of the Yucatan."

Represented the organizations with other university research institutions and academic departments, federal agencies, and public groups.

***Key Research Sponsors/Partners:***

- Department of Agriculture (USDA):
  - U.S. Forest Service (USFS), and
  - Natural Resources Conservation Service (NRCS)
- Department of Defense (DOD)
  - U.S. Army Corps of Engineers (ACOE):
    - o Construction Engineering Research Laboratory (CERL),
    - o Waterways Experiment Station (WES), and
    - o Topographic Engineering Center (TEC).
- Department of Interior (DOI) Bureaus:
  - US Geological Survey (USGS),
  - US Fish and Wildlife Service (USFWS),
  - National Park Service (NPS; i.e., Big Bend National Park),
  - Minerals Management Service (MMS),
- Federal Emergency Management Agency (FEMA),
- National Aeronautics and Space Administration (NASA),
- National Institute of Health (NIH),
- National Oceanographic and Atmospheric Administration (NOAA),
- Office of National Drug Control Policy (ONDCP),
- US Agency for International Development (USAID),
- US Army Corps of Engineers (USACE; Construction Engineering Research Center [CERL], Waterways Experiment Station [WES], USACE Districts),
- US Department of Agriculture (USDA):
  - US Forest Service (USFS),
  - Natural Resources Conservation Service (NRCS),
- US Environmental Protection Agency (EPA),
- US Trade Development Agency (TDA),
- United Nations (UN; i.e., Food and Agriculture Organization [FAO], World Health Organization [WHO]),
- State Agencies (i.e., Texas Parks and Wildlife Department, Louisiana Department of Environmental Quality, Texas Natural Resources Information System [TNRIS], Texas Forest Service, Texas Department of Transportation [TXDOT], Louisiana Department of Natural Resources, Louisiana Forest Service, Louisiana Department of Transportation, Louisiana Geological Survey, Louisiana Water Resources Research Institute (LWRRI)],
- Universities (i.e., Sam Houston State University, Texas A&M University)
- County Agencies (i.e., Harris County Flood Control District),
- Non-Governmental Organizations (NGO's; i.e., The Nature Conservancy, Academy of Sciences' National Research Council [NRC]),
- Foundations (i.e., The Houston Endowment, National Science Foundation [NSF], Hewlett Foundation, MacArthur Foundation), and
- Industries (i.e., Michael Baker Corporation, Tetra Tech International, Texaco, Transamerica, URS Corporation, Woodward Clyde).

### *Awards/Societies:*

- **David Cameron Environmental Crime Award**, in recognition of geographic information system (GIS) support provided to the Environmental Investigations Unit, assigned to the Special Investigations Command, Major Offenders Division of the Houston Police Department (HPD). Presented by the International Association of Chiefs of Police (IACP), 2012.
- **Chief of Police Commendation**, in recognition of geographic information system (GIS) support provided to the Environmental Investigations Unit, assigned to the Special Investigations Command, Major Offenders Division of the Houston Police Department (HPD), 2012.
- **Special Recognition** - presented by the National Office of the of the USGS GAP Analysis Program Office in recognition of vision and dedication to the development of the Protected Area Database of the United States (PAD-US), 2007/08.
- **Gold Medal**, in recognition for uniqueness, originality, technology, value to the engineering profession, complexity, and meeting the needs of the client. Presented to the URS Project Team by the Texas Council of Engineering Companies for the NASA/HCFCD sponsored project entitled "Characterizing, Monitoring, Understanding, and Regulating Rapidly Growing Urban Watersheds", 2007,
- **Conservation Service Award (CSA)**, the "highest honor that can be bestowed upon a private citizen or group by the Department of the Interior". Presented by Secretary of the Department of Interior (DOI) Gail Norton and "recognizes outstanding performance and direct service to the effectiveness of the Department's mission in conjunction with one or more bureaus", 2005,
- **Fellow**, Association for the Advancement of Science (AAAS), in recognition for "advances in the research, development, integration, and operational application of remote sensing, spatial analysis, and bioinformatics technologies and for fostering the adoption of information technologies in the quantitative assessment of the status and trends of natural ecosystems," 2003,
- **Loyal Order of Hymenoptera Award** - Presented by the Director of the US Geological Survey (USGS) in "recognition of honorable services performed in connection with this Department's conservation activities", 2001.
- **John I. Davidson President's Award for Practical Papers**, American Society for Photogrammetry and Remote Sensing (ASPRS), First Place recipient, 2001,
- **National Resource Award** - NASA/Goddard Space Flight Center, in recognition of the success of the Airborne LIDAR Topographic Mapping System Commercialization Project, 1999,
- **Government Technology Leadership Award** - NASA/Goddard Space Flight Center, in recognition of the Airborne LIDAR Topographic Mapping System, 1999,
- American Association of Geodetic Surveying (AAGS), Full Member 1995,
- Geographic and Land Information Society (GLIS), Full Member 1995,
- **Group Achievement Award** - NASA/Goddard Space Flight Center, in recognition of the success of the Agro-Climatic Environmental Monitoring Project, Bangladesh 1986,
- American Institute of Biological Sciences (AIBS), 2008-Present
- Society for Conservation Biology (SCB), 2006-Present.
- American Association for the Advancement of Science (AAAS), 2002-Present,
- Beta Beta Beta (National Biological Honor Society),

- Sigma Xi (The Scientific Research Society),
- American Society of Photogrammetry and Remote Sensing (ASPRS), 1975-Present, and
- Geospatial Information and Technology Association (GITA), 1999.

**Clearance:** Secret Level (1991-2003, Houston Advanced Research Center)

***Certifications:***

**Certified Mapping Scientist** - GIS/LIS - No. GS111; American Society of Photogrammetry and Remote Sensing.

**Certified Mapping Scientist** - Remote Sensing - No. RS111; American Society of Photogrammetry and Remote Sensing.

***Consulting/Applied Research:***

***Strategic Planning and Research Initiative Development Watershed Monitoring:***

***Remote Sensing and Geospatial Information Systems***

2003- URS Corporation, Harris County Flood Control District, NASA. Researched and  
2009 applied integrated airborne LIDAR and multispectral satellite (IKONOS) data to characterize, monitor, understand, and regulate growing urban watersheds (conducted in the capacity of a NASA Co- Principal Investigator).

2008- Tetra Tech International, Inc. Helped develop a remote sensing  
2009 and geospatial data and information management system to monitor land use changes in the Panama Canal watershed (associated with the payment of sustainable forestry preservation services/incentives to local land owners).

***Ecosystem Status and Trends: Geospatial Technology***

1998- TerraPoint, LLC (Consulting Vice President). Helped develop  
2002 business/science/technology strategy and design and conduct national and international environmental/ecosystem applications projects using airborne LIDAR generated topographic data.

***Wetland Status and Trends***

1992- Breedlove, Dennis, and Associates, Orlando, Florida. Assisted in the design  
1994 of a system to assess vegetation change analysis in the Florida Everglades.

***Natural Resources Status and Trends: Geospatial Technology***

1982- Principal and Co-Founder of Aero-Data, Inc., Baton Rouge, Louisiana.  
1991 Conducted historic photointerpretation of hazardous waste sites and the status and trends of natural resources (forest, riparian, and coastal ecosystems change assessments).

**Fisheries: Geospatial Technology**

1987 Food and Agriculture Organization (FAO), United Nations. Developed and taught a short course on "Applications of GIS and Remote Sensing to Fisheries Development"; Beijing, China.

**Coastal Ecosystem and Water Quality Status and Trends**

1980 EPA/EMSL, Las Vegas. Developed and taught a short course to train Virginia and Maryland personnel (Chesapeake Bay Program) in the use of Landsat satellite data to monitor the Chesapeake Bay, Maryland.

***National and International Scientific Technical Committees and Societies:***

**Head of Delegation**, World Data Center for Biodiversity and Ecology as an Associate Participant organization in the Global Biodiversity Information Facility (GBIF), Copenhagen, Denmark, April 2005–2010.

**Session Chair**, World Biodiversity Congress; Biological Informatics Session, Chiang Mai, Thailand, March, 2009.

**Member**, Data Utilization Subgroup, Intergovernmental ad hoc Group on Earth Observations (GEO and USGEO), established after the Earth Observation Summit to prepare a 10-year implementation plan for a coordinated, comprehensive, and sustained Earth observation system or systems among governments and the international community to understand and address global environmental and economic challenges,” October 2003-2005.

**Member**, Interagency Working Group on Earth Resources (IWGEO), Executive Office of The President of the United States, National Science and Technology Council (NSTC), Committee on Environmental and Natural Resources (CENR), established after the Earth Observation Summit to prepare “the 10-year plan for developing an integrated Earth Observation System for the United States in conjunction with the international community” (U.S plan to be integrated with GEO; see above), October 2003-2006.

**Member**, GIS Applications to Biodiversity Working Group and Funding Development Committee, Global Biodiversity Information Facility (GBIF), Copenhagen, Denmark, April 2003-2007.

**U.S. Delegate**, Joint U.S./INDO (India) Biodiversity Delegation/Initiative, December 2004-2010.

**Ex-Officio Member**, National Biological Information Infrastructure (NBII) Science Committee, U.S. Geological Survey (USGS), September 2003-2010.

**Technical Working Group Member**, NSF Biodiversity and Ecosystem Informatics (BDEI) Workshop, Spatial and Temporal Data, and Remote Sensing Group, Washington, D.C., February 2003.

**Fellow**, American Association for the Advancement of Science (AAAS).

**Member**, American Association for the Advancement of Science (AAAS), Section (T) on Information, Computing, and Communication. 2002-Present.



**Member**, American Society of Photogrammetry and Remote Sensing (ASPRS). 1976-Present.

**Affiliate Member**, United Nations' (UN) Convention on Biodiversity (CBD), Clearing House Mechanism (CHM). 2002-2004.

**U.S. Delegate**, Global Biodiversity Information Facility (GBIF), Copenhagen, Denmark, October 2002-2005.

**U.S. Delegate**, Inter-American Biodiversity Information Network (IABIN), City of Knowledge, Panama, June 2002-2007.

**Session Co-Chair**, National Council for Science and the Environment (NCSE). 2<sup>nd</sup> Conference on Science, Policy, and the Environment "Sustainable Communities: Science and Solutions", Information Technology Session. Washington, D.C., December 2001.

**Panel Chairman**, "NASA's Plan for Spaceborne SAR Remote Sensing" Workshop. Houston, Texas, January 2000.

**Committee Member**, Space and Natural Disasters Reduction Committee. International Astronautical Federation. Paris, France, 1992-2000.

**Technical Committee Member**, International Symposium on Spectral Sensing Research: High Resolution Spectral Sensing of the Environment. Maui, Hawaii, November, 1992.

**President**, Mid-South Region of the American Society of Photogrammetry and Remote Sensing, 1986 - 1987 Term.

**Corresponding Member**, Remote Sensing Task Committee, American Society of Civil Engineers (ASCE), 1984 - 1990.

**Technical Committee Member**, Sea-WiFS (Ocean Color) Working Group, NASA/EOSAT sponsored workshop to evaluate scientific and operational requirements of the Sea-Wide Field Sensor on Landsat-6, Lanham, Maryland, 1987.

**Technical Committee Member**, Thematic Mapper Scientific Working Group (NASA sponsored), Greenbelt, Maryland, 1983.

**Chairman**, Remote Sensing of Water Resources Panel, Interactive Symposium and Workshop on Applications of Remote Sensing for Rice Production. NSF sponsored. National Remote Sensing Agency, Hyderabad, India, 1981.

**Chairman**, NASA Landsat E, Multispectral Resource Sampler Planning Oceanography Panel, Colorado State University, Fort Collins, Colorado, 1979.

***Published Journal Articles:***

1. **Hill, J.M.** and D. S. Graham. Using Enhanced Landsat Images for Calibrating Real-Time Estuarine Water Quality Models. *Water Quality Bulletin* (United Nations, World Health Organization). 5(1):20-23, 1980.
2. Graham, D.S., J.P. Daniels, **J.M. Hill**, and J.W. Day, Jr. A Preliminary Model of the Circulation of Laguna de Terminos, Campeche, Mexico. *Anales de este Centro*.

*Publicaciones del Centro de Ciencias del Mar y Limnología.* University Nacional D. Mexico. A Yanez - Aracibia (Ed.). 8(1):51-62, 1981.

3. **Hill, J.M.**, P. M. Zimmerman, and C.A. Harlow. Applications of a Geographic Information System to Manipulate Environmental Data. *The Environmentalist*. Elsevier Sequoia, Switzerland. 3(1):33-38, 1983.
4. Graham, D.S., and **J.M. Hill**. Field Study for Landsat Water Quality Verification. *ASCE/Journal of Transportation - Aerospace Division*. 109(5):640-650, 1983.
5. Sasser, C.E., M.D. Dozier, J.G. Gosselink, and **J.M. Hill**. Spatial and Temporal Changes in Louisiana's Barataria Basin Marshes, 1945-1980. *Journal of Environmental Management*. 10(5):671-680, 1985.
6. Hughes, J.S., D.L. Evans, P.Y. Burns, and **J.M. Hill**. Discrimination of Southern Pine Species on Low-Level Aerial MSS Imagery. *Journal of Photogrammetry and Remote Sensing*. 52(8):1175-1180, 1986.
7. **Hill, J.M.**, V.J. Singh and H. Aminian. A Computerized Data Base for Flood Prediction Modeling. *Water Resources Bulletin*. 23(1):21-27, 1987.
8. Braud, D.H., Jr., and **J.M. Hill**. A Decision Tree for Coastal Management Permit Guidelines. *Journal of Environmental Management*. 12(1):29-36, 1988.
9. Kapetsky, J.M., **J.M. Hill**, and L.D. Worthy. A Geographical Information System for Catfish Farming Development. *Journal of Aquaculture*. Elsevier, Netherlands. 68:1-10, 1988.
10. Kapetsky, J.M., **J.M. Hill**, L.D. Worthy, and D.L. Evans. Assessing Potential for Aquaculture Development with a Geographic Information System. *Journal of the World Aquaculture Society*. 21 (4):241-249, 1990.
11. Evans, D.L., and **J.M. Hill**. Landsat TM Versus MSS Data for Forest Type Identification. *Geocarto International*. 3:13-20, 1990.
12. Zukowski, S.H., **J.M. Hill**, F.W. Jones and J.B. Malone. Development of a Soil-Based Geographic Information System Model of Habitat of Fossaria bulimoides, a Snail Intermediate Host of Fasciola hepatica. *Preventive Veterinary Medicine*. 11:221-227, 1991.
13. Evers, D. E., J.G. Gosselink, C.E. Sasser, and **J.M. Hill**. Wetland Loss Dynamics in Southwestern Barataria Basin, Louisiana (USA), 1945-1985. *Wetlands Ecology and Management*. SPB Academic Publishing by The Hague. 2(3):103-118, 1992.
14. **Hill, J.M.**, L.A. Graham, R.J. Henry, D. Cotter, A. Ding, and D. Young. Wide-Area Mapping and Applications Using Airborne Light Detection and Ranging (LIDAR) Technology. *Journal of Photogrammetry and Remote Sensing*. 66(8):908-914, August 2000.
15. Bucheli1, S.R., Z. Pan, C. L. Glennie, A. M. Lynne1, D P. Haarman, and **J. M. Hill**. Terrestrial Laser Scanning to Model Sunlight Irradiance on Cadavers under Conditions of Natural Decomposition. *International Journal of Forensic Medicine* (Submitted).

***Published Conference Proceedings:***

**Emerging Human-Wildlife Diseases:**

1. Zukowski, S., J.B. Malone, and **J.M. Hill**. Use of a Computerized Geographic Information System to Model Potential Habitat of *Fossaria Bulimoides*. Proc. 36th Annual Meeting of the American Society of Tropical Medicine and Hygiene. Los Angeles, California. November 1987.
2. **Hill, J.M.**, D. Flint, G. Gladish, and F. Stetina. Case Studies of a Natural Resource and Economic Development Analysis System. 10th ASEAN Conf. on Remote Sensing. Kuala Lumpur, Malaysia. November 1989.
3. **Hill, J.M.** Impact of Space Technology on Health Care. United Nations International Conference on Spin-Off Benefits of Space Technology. Tampa, Florida. March 1998.

**National/International Biological Informatics:**

4. Stetina, F., C. Vermillion, and **J.M. Hill**. A Uniform Global Monitoring and Environmental Data Acquisition and Distribution System. 12<sup>th</sup> Asian Conf. On Remote Sensing. Singapore. October 1991.
5. Cotter, G.A., T. Hermann, and **J.M. Hill**. Bioinformatics and Biodiversity. The International Conference on Bioinformatics (InCOB) 2002: North-South Networking. Bangkok, Thailand. February 2002.
6. **Hill, J.M.**. Building the US National Biological Information Infrastructure (NBII): Synergy Between Regional and National Initiatives. CODATA 2002 Frontiers of Scientific and Technical Data. Topic Area - Biological Sciences: The Challenge for Biodiversity and Ecosystem Informatics. Montreal, Canada. September 2002.
7. **Hill, J.M.**, G. Cotter, B. Carroll, and T. Lahr. Building the National Biological Information Infrastructure (NBII). BioThailand 2003: The International Conference on Biodiversity and Bioactive Compounds (InCoBB). Pattaya, Thailand. July 2003.
8. Hermann J., G. Cotter, T. Lahr, and **J.M. Hill**. Bioinformatics Enabling Biodiversity and Societal Benefits. 19<sup>th</sup> International CODATA Conference. The Information Society: New Horizons for Science. Berlin, Germany. November 2004.
9. Hermann J., G. Cotter, T. Lahr, **J.M. Hill**, and C. Wilson. Successful Solutions to Global Biodiversity Data Digitization, Validation, Update, Integration, Access, and Application. 20<sup>th</sup> International CODATA Conference, Beijing, China. October 2006.
10. **Hill, J.M.**, Significant Advancements in Quantity, Quality, Integration, and Access to Global Interdisciplinary Ecological Data and Information. Ecological Complexity and Sustainability: Challenges and Opportunities for the 21<sup>st</sup> Century Conference. Beijing, China. May 2007.
11. **Hill, J.M.**, WDC Integrated Global Data and Delivery Tools in Support of GEOSS Biodiversity and Ecological Societal Benefits. IUGG XXIV General Assembly: Earth, Our Changing Planet. Perugia, Italy. July 2007.
12. Hermann, T., T. Lahr, G. Cotter, **J. M. Hill**. Global Biodiversity and Ecological Metadata

Constraints and Recommended Solutions. 21st International **CODATA** Conference. Kiev, Ukraine. October, 2008.

13. Cotter, G. and **J.M. Hill**. Integrating National, Hemispheric and Global Data Sets: Delivery Tools, Challenges and Solutions. World Biodiversity Congress. Chaing Mai, Thailand. March, 2009.

**Forest Ecology/Habitat Characterization/Threatened and Endangered Species:**

14. **Hill, J.M.**, D.L. Evans, and L. Carpenter. Remote Sensing of Little River, Cossatot River, and Pond Creek Bottoms in Sevier County, Arkansas. U.S. Army Corps of Engineers Remote Sensing Symposium. Nashville, Tennessee. November 1981.
15. Evans, D.L., P.Y. Burns, and **J.M. Hill**. Landsat Imagery for the Interpretation of Louisiana Forest Habitat Regions. Proc. ACSM-ASP 43rd Annual Spring Meeting. Washington, D.C. March 1983.
16. Tweddale, S., R. Leyva, L.Graham, **J.M. Hill**, D. Evans, S. Roberts, and P. Campbell. LIDAR and Multispectral Imagery for Avian Habitat Assessment. Threatened, Endangered, and At-Risk Species Research Symposium and Workshop on DoD and Adjacent Lands. Baltimore, Maryland. June 2005
17. Tweddale, S., R. Leyva, L.Graham, **J.M. Hill**, D. Evans, S. Roberts, and P. Campbell. LIDAR and Multispectral Imagery for Avian Threatened and Endangered Species Habitat Assessment. Special Symposium entitled Light Detection and Ranging and Applications for Wildlifers. Annual Wildlife Society Conference. Anchorage, Alaska. September 2006.

**Coastal and Marine Ecology/Status and Trend:**

18. Harlan, **J.M. Hill**, C. Bohn, and H.A. El-Reheim. A Biological and Physical Oceanographic Remote Sensing Study Aboard the Calypso. Proc. Tenth International Symposium on Remote Sensing of the Environment. Ann Arbor, Michigan. 1975.
19. Graham, D.S., **J.M. Hill**, and B.A. Christensen. Verification of an Estuarine Model for Apalachicola Bay, Florida. Proc. ASCE Symposium on Mathematical and Physical Models in Hydraulic Engineering. University of Maryland. August 1978.
20. Dozier, C. E. Sasser, and **J.M. Hill**. Assessment of Coastal Deterioration Using Historical Photography and a GIS. Proc. National Conference on Energy Resource Management. Energy Planning Division. Baltimore, Maryland. September 1982.
21. **Hill, J.M.**, C.A. Harlow, and D. Braud. Remote Sensing and Geographic Data as Applied to the Louisiana Coastal Zone. Intern. Geoscience and Remote Sensing Symp. (IGARSS'81). IEEE Geoscience and Remote Sensing Society. IEEE Catalog No. 81CH1656-8. Washington, D.C. V. 2. June 1981.
22. Dozier, S.M., C.E. Sasser, J.C. Gosselink, and **J.M. Hill**. Assessment of Coastal Deterioration Using Historical Photography and a Geographic Information System. Proc. RNRf Symp. on the Application of Remote Sensing for Resource Management. Seattle, Washington. May 1983.

23. **Hill, J.M.** and L.D. Worthy. A GIS Applied to the Assessment of Natural and Man-Made Impacts of Deltaic Ecosystems. Proc. of Conf. on Integration of Remotely Sensed Data in GIS's for Processing Global Resource Information. Center for Earth Resource Management. Washington, D.C. May 1985.
24. Leibowitz, S., **J.M. Hill**, and E. Parton Evers. Computerized Analysis of Spatial Trends in Wetland Loss in Louisiana. Proc. 7th Annual Gulf of Mexico Info. Transfer Meeting. U.S. Dept. of Interior. Mineral Management Service (MMS 87-0058). New Orleans, Louisiana. November 1986.
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58. Stetina, F., D. Friedman, B. Krabill, T. D. Kunz, **J.M. Hill**, D. DiRosa, and J. Schmidt. Progress on the Airborne LIDAR Topographic Mapping System (ALTMS) Sensor. IGARSS '93/URSI Conf. Proceedings. Tokyo, Japan. August 1993.
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61. **Hill, J.M.**, and S. DeLoach. Advanced 3-D LIDAR Aerial Surveys. 3-D in Transportation. Transportation Research Board Symposium and Workshop. Minneapolis, Minnesota. May 1997.
62. **Hill, J.M.** Commercialization of the Airborne LIDAR Topographic Mapping System. 37<sup>th</sup> Goddard Memorial Symposium. American Astronautical Society. Greenbelt, Maryland. March 1999.
63. **Hill, J.M.** Airborne LIDAR Topographic Mapping System: Digital Earth Feature/Terrain Data and Applications. GTC Southwest 2000 Government Technology Conference. Austin, Texas. February 2000.

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1. **Hill, J.M.**, C. Gloyna, K. Chavez, and D. Young. Operational Visualization Applications for Decision-making at the Texas Department of Transportation Using LIDAR Data. *EOM Earth Observation Magazine*. November 2000: p. 14-18.
2. **Hill, J.M.**, D. Cotter, R. Dodson, and L.A. Graham. Tropical Storm Allison Bolsters Mapping Efforts. *GEOWorld*. November 2001: 14 (11):38-41.

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- Hill, J.M.** and D. L. Evans. Bottomland Forest Community Delineation with Color-Infrared Aerial Photographs. *Forest Notes*, Agricultural Experiment Station, Louisiana State University, August 1982.



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2. Leyva, R. I., R.J. Henry, L.A. Graham, and **J.M. Hill**. 2002. Use of LIDAR to determine vegetation vertical distribution in areas of potential black-capped vireo habitat in Fort Hood, Texas. In Endangered species monitoring and management at Fort Hood, Texas: 2002 annual report. Fort Hood Project, The Nature Conservancy of Texas, Fort Hood, Texas, USA.

**Coastal and Marine Ecology/Status and Trends:**

3. Harlan, J.C., S.F. El-Sayed, **J.M. Hill**, H. Abdel Reheim, P. Babai, and T. Dillion. Scientific Investigations in the Gulf of Mexico and Caribbean During the 1974-1975 Calypso Cruise. Research Foundation. Texas A&M University. Interim Report. March 1975.
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7. Dozier, S.M., J.G. Gosselink, C.E. Sasser, and **J.M. Hill**. Wetland Change in Southwestern Barataria Basin, Louisiana, 1945-80. Coastal Ecology Laboratory. Center for Wetland Resources. Louisiana State University. LSU-CEL-83-11. December 1983.
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11. **Hill, J.M.**, D. Evans, P. Turnipseed, and C.A. Harlow. Environmental Monitoring for Coastal Zone Management. Remote Sensing and Image Processing Laboratory. Division of Engineering Research. Louisiana State University. Final Report. April 1985.
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14. **Hill, J.M.** and D. L. Worthy. A Study to Monitor Land Loss by Soil Type in Lafourche Parish, Louisiana. Submitted to Lafourche Parish Coastal Management Program. Final Technical Report TR-3.01.87. Remote Sensing and Image Processing Laboratory, Louisiana State University. March 1987.
15. **Hill, J.M.**, R.N. Terry, L.D. Worthy, and S.E. Dicks. Historical Land-Cover Change Mapping for Floodplain Management within the Amite River Basin, Louisiana. Submitted to U.S. Army Corps of Engineers, New Orleans District. Final Technical Report TR-3.02.87. Remote Sensing and Image Processing Laboratory, Louisiana State University. July 1987.
16. Mendelssohn, I.A. and **J.M. Hill**. Effects of Oil Spills on Coastal Wetlands and Their Recovery: Year 4, Final Report. OCS Study MMS 93-0045. U.S. Department of the Interior, Minerals Management Service, Gulf of Mexico. OCS Office, New Orleans, LA. 46pp. September 1993.

**Aquatic Ecology/Water-Quality:**

17. **Hill, J.M.** Landsat Assessment of Estuarine Water Quality with Specific Reference to Dredging and Silviculture Activities. U.S. EPA Tech. Series Report. 1979.
18. Dantin, E.J., **J.M. Hill**, C.A. Harlow, R.F. Malone, and M.E. Tittlebaum. Plan of Study for Evaluating the Effects of Lignite Mining in Louisiana on Water Resources. Louisiana Water Resources Research Institute. Louisiana State University. Technical Report No. 8. August 1981.
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27. **Hill, J.M.**, V.P. Singh, and H. Aminian. A computerized Data Base for Hydrologic Modeling of the Amite River Basin, Louisiana. Remote Sensing and Image Processing Laboratory. Division of Engineering Research. Louisiana State University. Final Report. January 1984.
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29. **Hill, J.M.** and G. Bergeron. Topographic Mapping for Hurricane Vulnerability Study for the New Orleans Region. Remote Sensing and Image Processing Laboratory. Division of Engineering Research. Louisiana State University. Final Report. June 1984.
30. Harlow, C. A., **J.M. Hill**, and O.K. Huh. Training and Applications Software for the Nation of Bangladesh Using HRPT/AVHRR Data. Remote Sensing and Image Processing

Laboratory. Division of Engineering Research, Louisiana State University. Final Report. December 1985.

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32. **Hill, J.M.**, K. Zhang, and S. Ribanszky. Application of Satellite Imagery and a GIS to Monitor Land Use Change (Development) in Flood Risk Zones. Submitted to the Federal Emergency Management Agency, Washington D.C. Houston Advanced Research Center (HARC), Final Technical Report Number 93.001. February 1993.
33. **Hill, J.M.**, B. Patel, and D. Hitchcock. Texas Floods: Data Coordination and Development. Submitted to the Federal Emergency Management Agency, Disaster Field Office, Region VI, Federal Center, Denton, Texas. Contract Number EMW-92-C-3980, Houston Advanced Research Center (HARC), Final Technical Report Number 95001. June 1995.
34. **Hill, J. M.**, J. Alba, L. Graham, and Q. Li. Characterizing, Monitoring, Understanding, and Regulating Rapidly Growing Urban Watersheds. Submitted to Harris County Flood Control District (HCFCD) and National Aeronautics and Space Administration (NASA). Final Technical Report. April 2006.

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35. **Hill, J.M.** and T.D. Kunz. The Airborne Lidar Topographic Mapping System (ALTMS) Program: Pre-Phase 1; Conceptual System Design and Performance Specifications. Houston Advanced Research Center (HARC) Final Technical Report No. FTRNLP1. December 1991.
36. **Hill, J.M.**, T.D. Kunz, and A.J. Blanchard. Lidar Oil Spill Detection Literature Review. Submitted to The Marine Spill Response Corporation, and The Texas General Land Office, Austin, Texas. Final Technical Report Number TGLOFTR 103092, Texas General Land Office Contract Number 92-178-R. October 1992.
37. **Hill, J.M.** Accuracy and Application Assessment of the Airborne LIDAR Topographic Mapping System (ALTMS). Submitted to the Federal Emergency Management Agency, Mitigation Office, Washington, D.C. Contract Number EMW-93-K-4308, Houston Advanced Research Center (HARC), Final Technical Report Number 96001. October 1996.
38. **Hill, J.M.** The Airborne LIDAR Topographic Mapping System (ALTMS) Program Phase I: Prototype Design, Construction, and Commercialization. Submitted to NASA Goddard Space Flight Center, Greenbelt, MD. Contract Number NAG5-1981, Houston Advanced Research Center (HARC), Final Summary of Research. June 2001.

***Technical Manual:***

Huh, O.K., S. Leibowitz, D. DiRosa, and **J.M. Hill**. User's Guide to Image Processing and Applications of the NOAA Satellite HRPT/AVHRR Data. Submitted to NASA/Goddard Space Flight Center, Greenbelt, Maryland. January 1986.

***White Paper:***

Uhlir, P, **J. Hill** (et.al.). Global Earth Observation System of Systems (GEOSS) Data Sharing Principles. International Council for Science (ICSU)/Committee for Data on Science and Technology (CODATA). Paris, France. 2009.

***Invited Lectures (Selected examples):***

"Biodiversity Applications Using Advanced GIS, Remote Sensing, and Visualization Technologies." Presented at the Joint International Workshop on Biodiversity Informatics: An INO-US Initiative. Pune, India. December 2004.

"Technology Commercialization Office's Inventor Awards." Keynote speaker: NASA Goddard Space Flight Center, Greenbelt, MD. October 2000.

"Feature Identification and/or Extraction Applications Development from Large Area Urban LIDAR Derived Data Sets." Presented at the ISPRS Workshop for Mapping Surface Structure and Topography by Airborne and Spaceborne Lasers. La Jolla, CA. November 1999.

"Fisheries Applications of Remote Sensing and Geographic Information Systems." Presented to the United Nations/Food And Agriculture Organization (FAO). Rome, Italy. November 1992.

"Remote Sensing and Geographic Information Systems Applied to Natural Resources Management." Presented to the Pakistan Space and Upper Atmospheric Research Commission (SUPARCO). Karachi, Pakistan. August 1987.

"Application of Remote Sensing and Geographic Information Systems to Rice Production." Presented at the International Rice Research Institute (IRRI). Manila, Philippines. August 1985.

"Environmental Applications of Remote Sensing." Presented at the Remote Sensing Center. Bangkok, Thailand. July 1984.

***Invited Conferences/Workshop/Meetings (Selected examples):***

**Joint US/INDO (Indian) Bioinformatics Workshop.** Biodiversity Informatics and Applications Using GIS, Remote Sensing, and Visualization Technologies. Pune, India. December 2004.

**Inter-American Biodiversity Information Network (IABIN)** Second Council Meeting and IABIN Invasives Information Network Workshop. Miami. Florida. January 2002.

**National Council for Science and Environment (NCSE)** 2<sup>nd</sup> Conference on Science, Policy, and the Environment “Sustainable Communities: Science and Solutions” Information Technology Session Co-Chair. Washington, D.C. December 2001.

**U.S. Geological Survey** Gulf of Mexico Integrated Database Workshop. St. Petersburg, Florida. December 2001.

**2000 Kentucky Department of Transportation (KYDOT)** Project Development CEC Partnering Conference, Surveying Session invited presentation. “Transportation Applications of LIDAR Data”; Bowling Green, Kentucky. August 2000.

**National Science Foundation (NSF)**, U.S. Geological Survey Biological Resources Division, Morgan, Lewis & Bockius, and the Academy of Natural Sciences; Philadelphia, Pennsylvania. “Forging National Biological Information Infrastructure (NBII) Partnerships” Workshop participant. April 2000.

**U.S. Academy of Sciences, National Resources Council (NRC)**, sponsored trip to Indonesia to discuss the enhancement of spatial information system technologies for environmental applications, with the Indonesian Agency for Technology Assessment and Implementation (BPPT). February 1994.

**MacArthur Foundation** sponsored trip for a planning workshop in preparation for the international conference on the Impacts of Climate Variations and Sustainable Development. Fortaleza, Brazil. September 1991.

**US Agency for International Development (AID)** sponsored trip to International Rice Research Institute (IRRI), Philippines, to investigate the potential for a remote sensing (AVHRR, TM, SPOT) research project associated with water resources and rice production. June 1986.

**National Science Foundation (NSF)** sponsored trip to Hyderabad, India, to make a presentation and act as Chair of Waters Resources Committee for the Interactive Symposium and Workshop on Applications of Remote Sensing for Rice Production. September 1981.

***International Projects/Initiatives:***

**Argentina** - Assessed the need to apply RS/GIS technologies associated with the environmental monitoring/economic development initiatives of the oil and gas industry. 1991-1997.

**Bangladesh** – Conducted training and developed environmental applications of Advanced Very High Resolution Radiometer (AVHRR) and Landsat satellite data. 1986-2002.

**Brazil** - Analyzed the applications of RS/GIS technologies to make informed policy decisions associated with the drought stress (climate change) and other potential environmental (i.e., biodiversity) impacts. 1991-2000.

**China** - Instructor, United Nations/FAO sponsored workshop entitled "Remote Sensing and GIS Technology Applied to Planning for Aquaculture Development", 1987. Entered into a Memorandum of Understanding (MOU) with the Institute of Remote Sensing Applications (IRSA) through the Chinese Academy of Sciences that emphasizes RS/GIS applications for

natural resources and environmental assessments, 1994. Discussions with the Chinese Academy of Sciences and World Data Centers regarding the potential for collaborative biodiversity and ecological data sharing initiatives. 2006-2008.

**Denmark** – U.S. Delegate and GIS Application to Biodiversity Working Group Member, Global Biodiversity Information Facility (GBIF). 2002-2004. Head of Delegation for the WDCBE (as Associate Participant) in GBIF. 2005-2010.

**Hong Kong and Guam** – Assisted, with NASA, various university programs develop and implement integrated remote sensing/GIS facilities (primary emphasis was on coastal and marine resource assessments using AVHRR and SeaWiFS data). 1992-1995.

**India** - Investigated existing capabilities and potential for environmental and natural resource monitoring and management related remote sensing projects (1981). Participated in joint the U.S./INDO (India) biodiversity and associated biological informatics initiatives. 2004-2008.

**Indonesia** - Entered into a Memorandum of Understanding (MOU) with the Indonesian Agency for Assessment and Application of Technology (BPPT) to focus on the transfer of RS/GIS technologies applied to biodiversity and natural resource management (including oil spill response planning). 1988-Present.

**Malaysia, Nepal, Philippines (International Rice Research Institute/IRRI), Pakistan** – Investigated, with NASA, existing capabilities and potential for environmental and natural resource monitoring and management related remote sensing projects. 1981-1999.

**Mexico** – Helped film the sleeping sharks and water quality monitoring and modeling, 1974. Assessed biodiversity and water resources along the U.S.-Mexico border. 1996-2003.

**Panama** - Helped develop a remote sensing and geospatial data and information management system to monitor land use changes in the Panama Canal watershed (associated with the payment of sustainable forestry preservation services/incentives to local land owners). 2008-2009.

**Paraguay** – Initiated a joint initiative between the World Data Center for Biodiversity and Ecology (WDCBE) and Guyra Paraguay (an NGO) to integrate biodiversity and remotely sensed data to help in the decision process, at the national level, to select new protected areas in Paraguay. 2004.

**South Africa** – US component Project Manager, through the USGS/NBII and International Council for Science's (ICSU) World Data Center for Biodiversity and Ecology, for the development of the new African World Data Center for Biodiversity and Human Health (the first WDC in all of Africa). The lead partner organization in Africa is the South African National Research Foundation (NRF). 2008-2010.

**Switzerland** - Discussed U.S. Army Corps of Engineers related GRASS/GIS data development needs with the United Nations Global Resources Information Data Base (GRID) Program

and the United Nation's Disaster Relief Organization (UNDRO) to plan a disaster preparedness project for Indonesia, (1991-1992); also assessed potential collaboration with the National Biological Information Infrastructure (NBII) and LIDAR application(s). 2000.

**Thailand** – Developed environmental applications of AVHRR data to rice production and coastal processes, environmental, and water resources (RS/GIS), assessed potential for biological informatics technology transfer, and developed a methodology to map coastal land cover and geospatial data base for oil spill response planning. 1981-Present.

**Venezuela-** Assessed the need to apply RS/GIS technologies associated with the environmental monitoring/economic development initiatives of the oil and gas industry. 1991-1997.