

## ***Environmental and Natural Resources***

### ***Professional Services in Analysis, Planning, Production, and Management***

#### **Geospatial and Remotely-Sensed Information Development, Integration and Analysis**

Image Matters' staff are experts in and offer complete in-house services for the design, development, conflation, integration, analysis, summarization and cartographic presentation of geospatial data sets. Our services are sought after by clients ranging from the US Geological Service for assistance in preparing Natural Resource Damage Assessments, to the US Forest Service for recreation opportunity spectrum analysis, to the US Environmental Protection Agency for coastal wetland research. Having applied GIS tools for spatial operations on data ever since the very first GIS for public land management, the depth of our in-house expertise for geospatial information analysis is second to none.

#### **Analysis and Modeling**

Image Matters brings to bear a highly-educated, skilled, and experienced staff for geospatial analysis and spatially-specific modeling for environmental and natural resource problems. Our experience includes: the use of elevation and landcover data for modeling topographic landforms, erosion, sediment transport, damage assessment, siltation and deposition studies, as well as water quality investigation, analysis, and planning. Our terrestrial services also include historic forest cover and feature mapping and change detection analyses, Maneuver Damage Evaluation, Ecological Land Type (and Phase) modeling, habitat assessment, Species-Habitat Relationship Model development and application, and GAP Analysis. Our staff are experts in impact assessment for land management option evaluations including impacts on T&E species, natural areas, karst, and water resources. We specialize in impact modeling and analysis for Environmental Impact Statements involving direct and indirect simulation modeling, and for estimating impacts of climate change on agriculture, forests, and coastal wetlands.

#### **Natural Resource and Environmental Planning**

Our staff expertise is based upon graduate degrees and rich experience in earth and applied sciences including forest and rangeland science, soil science, geology, hydrogeology, ecology, wildlife biology, water resource management, and environmental chemistry. This knowledge and experience is brought to bear on GIS applications for watershed characterization and planning, and land use, urban, and regional planning. Our project experience includes: erosion modeling, ecological analyses, species-habitat modeling, impact assessments, and planning studies for the US National Forests and DoD training grounds, gap analysis for the US Fish & Wildlife Service; water basin characterization studies for the Indiana Department of Environmental Management; and Land Use Requirements Studies for National Guard Bureau.

#### **Image Processing, Photogrammetry, & Mapping**

Image Matters' draws upon robust experience ranging from traditional photogrammetry to advanced post-processing and image classification techniques that integrate field-based measurements. Our staff has produced numerous geospatial data layers from feature extraction and land cover classification projects for clients that include the US Army, US Forest Service, US Fish and Wildlife Service and Indiana National Guard. Our broad experience in developing derived mapping products includes vegetation, topographic, and habitat layers, and inputs for planning, change detection, and simulation models for clients ranging from The Nature Conservancy to the US Army Corp of Engineers.

#### **Master Planning**

Image Matters' strength in master planning comes from its ability to integrate all pertinent information and component studies to produce Installation and Training Area Master Plans that consider all important variables and conditions for options and recommended solutions.

In addition to the analysis, modeling, and planning products listed above, Image Matters staff have worked on Integrated Cultural Resource Management Plans, Integrated Natural Resource Management Plans, Planning Level Surveys, and associated Environmental Impact Statements and Assessments. In addition to multimedia products, we offer *e-Master Plans* which make the plan document and the supporting information – geospatial and otherwise – readily accessible in an integrated manner over the Internet or an intranet. Our larger projects often involve the planning, development, and deployment of a GIS with web-mapping applications. Our staff have successfully produced plans and constructed operational GIS of this type for the Hoosier National Forest (Indiana) as well as large military training, maneuver, and cantonment areas (Hohenfels CMTC, Germany) and (Camp Atterbury, Indiana).

#### **Environmental & Natural Resource Management**

Image Matters personnel have extensive experience in all phases of ecological restoration, environmental management, as well as environmental construction and offer a number of field services and products:

##### Aquatic Services:

- Non-Point Source Pollution, Erosion and Sediment Control Planning and Prevention
- Pond and Lake Design, Construction, Management, and Restoration
- Hydrologic Studies and Design.
- Nutrient/Sediment and Weed/Algae Control
- Stormwater Management & Pollution Prevention
- Aquatic Restoration
- Marine Consulting and Construction

##### Terrestrial Services:

- Field Scientific Research and Biological Surveys
- Non-Native and Noxious Weed and Plant Botanical Surveys, Mapping, and Controls
- Vegetation Management
- Slope Bioengineering and Stabilization
- Erosion Control Products and Services
- Habitat Restoration

#### **Geotechnical Services**

Image Matters personnel have over 20 years experience in providing Geotechnical Services and

managing multi-site and multi-party projects in the site investigation, remediation, and monitoring domains including:

- Hazardous Waste Investigation and Remediation
- Site Remediation
- Litigation/Mediation Support
- Landfills
- Brownfields
- Monitoring Wells
- Emergency Response Management

Our staff are experts in working in cooperation with government commerce agencies, development corporations, and lending institutions in supporting regulatory pathway and remediation costs evaluation associated with potential environmental strategy options and associated property transaction and redevelopment options.

#### **Key Personnel**

Image Matters draws from a highly qualified team of experts for its environmental and natural resource projects. Our seasoned project managers and staff include:

**Dr. Jeff Ehman**, Ph.D., Environmental Science, has 18 years experience in land and infrastructure planning and management with the US Bureau of Land Management, US Forest Service, US Army Europe, Indiana Army National Guard, and the City of Bloomington (Indiana) Utilities Department.

**Kurt Buehler** is the co-founder of Open Geospatial Consortium (OGC), successfully launched and led their technical program for 10 years, and is currently playing a key role in evolving the geospatial profile of both the Federal Enterprise Architecture and the DoD's SDSFIE.

**John Davidson**, leads Image Matters' efforts in geospatial systems engineering and technology, is an experienced software engineer with 22 years developing GIS technology, a lead OGC architect, and builds metadata creation, editing, validation, and management tools and systems for FEMA's MapMod program.

#### ***New Services***

Image Matters has recently expanded its scope to include: Environmental and Natural Resource Management led by **Steve Chafin**, 20 years experience, and Geotechnical Services led by **Stan Carpenter**, Licensed Professional Geologist, 22 years experience.