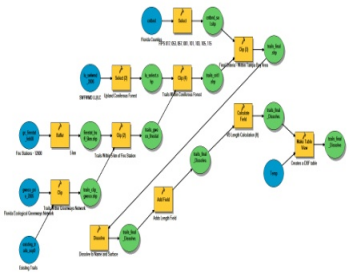
Geographic Information Systems

Services

BIRKITT ENVIRONMENTAL SERVICES, INC.



Birkitt Environmental Services, Inc. (Birkitt) offers extensive experience with providing innovative geospatial solutions in a variety of disciplines – from environmental analysis and assessment to planning and site development. Birkitt leverages today's advanced software and equipment to deliver exceptional results, while streamlining detailed processes and passing on considerable cost savings to the client. Adept with managing GIS projects, both large and small, our staff of professionals utilize the latest GIS and remote sensing software, such as ESRI's ArcGIS Desktop 10 (ArcInfo) and ENVI 4.5, as well as a variety of open-source programs, to provide cost-effective solutions to complex spatial problems. Birkitt staff offers extensive experience with aerial photo-interpretation and utilizes industry-leading GPS equipment and software platforms for easy incorporation of field-collected data into our workflow. Whether our clients require desktop analysis or sub-meter ground-truthing. Birkitt can tailor products and services to meet our client's needs, regardless of scope and size.

Key GIS Services Include:

- Cartographic and thematic mapping
- Land Use and Habitat Mapping
- GIS data analysis, QA/QC, and data management
- Spatial/relational database design and development
- Submeter GPS data collection
- Feature digitization
- Spatial format conversions (CAD, ESRI, KML, GML, etc.)
- Remote sensing and photo-interpretation
- Natural color/multispectral imagery analysis and transformation
- Change detection analysis
- Suitability and constraint modeling
- GIS data research and acquisition
- Data production
- Data library and data dictionary creation
- Metadata creation and management
- ArcGIS Desktop customization
- ModelBuilder geoprocessing and workflow automation

people and nature

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Project Experience

Florida Gas Transmission Phase VIII

Birkitt provided expertise and services for an interstate (FL, AL, and MS) pipeline expansion project of 580 miles, inclusive of wetland delineation and assessment, threatened and endangered species surveys, hydrographic features identification, and general consulting in support of environmental permitting, land cover analysis, and construction needs. Birkitt's GIS department contributed significantly to the project by creating, managing, and maintaining spatial databases of over 50,000 GPS points and 2,000 wetland polygons – compiled and digitized from submeter Trimble GPS devices – and through the production of thousands of precise cartographic maps in support of field surveys, agency reviews, and project management. Additionally, Birkitt provided detailed GIS and database analyses examining land cover (FLUCFCS), wildlife, natural and managed areas, and collected GPS data.

Loyce E. Harpe Park Environmental Assessment

Birkitt conducted an environmental assessment of the 540-acre Loyce E. Harpe Park property, in Polk County, FL, to determine environmental site constraints and to quantify the buildable acreage available onsite. As part of this assessment, photo-interpretation of high-resolution aerial imagery and extensive field verification was employed to determine the quality and spatial extents of jurisdictional wetlands onsite, as well as the quality and characterization of all upland habitat. A geodatabase was created for delineated wetlands, uplands, gopher tortoise habitat, nuisance exotics intensity, and potential buildable areas; subsequent GIS analyses were performed to calculate acreages and to qualitatively identify suitable areas for new development. Additionally, feature topology was validated and analyzed to ensure the highest standards of GIS data integrity and to obtain the most accurate site assessment.

Park Place Development

Birkitt is providing environmental consulting services for the construction of a 302-acre mixed-use development project site in Tallahassee, FL. Birkitt has developed UMAM assessments for all proposed wetland impacts onsite and has developed a mitigation plan detailing construction/design, maintenance, and monitoring of approximately 95 acres of wetland creation and restoration opportunities onsite. Birkitt's GIS department facilitated UMAM asessments, wetland restoration design, and a mitigation options analysis through the georeferencing of DWG/CAD files to aerial ground control points, data conversion to shapefile/geodatabase formats, spatial translation QA/QC (topology, geometry, and database integrity and accuracy assessments), acreage calculations, and graphical representation of features and analyses.

Tallahassee Airport Environmental Assessment

Birkitt is conducting threatened and endangered species surveys (gopher tortoise, indigo snake, and zigzag silkgrass) at the Tallahassee Regional Airport (TRA). The GIS component of the assessment involves the creation and maintenance of spatial databases of submeter GPS points, study areas, transects, and habitat polygons, as well as statistical analysis of gopher tortoise burrows and mapping of observed phenomena. Birkitt will utilize the survey results and agency guidance to assist with the completion of an Environmental Assessment (NEPA) required for a runway extension.