

Fields of Expertise

- Cartographic Presentation
- GIS Design and Development
- Ecological Research
- Field Data Collection

Professional Summary

Bryan Swindell has nearly a decade of experience providing GIS expertise to numerous government and private sector projects throughout the Rocky Mountain west. Bryan's strength lies in the collection, analysis and presentation of diverse types of geographic information. He has significant experience working on multidisciplinary teams to identify, organize and prioritize environmental and social issues. Prior to joining DTM in 2005, Bryan held a series of appointments as a biologist and geographer for the US Bureau of Land Management, the US Forest Service and the US Geological Survey.

Education

- **M.S. in Earth Sciences** – Montana State University, Bozeman, Montana. Emphasis on climatology and water resources.
- **B.A. in Environmental Studies** – Hiram College, Ohio. Emphasis on ecology.

Key Project Experience

- **Clark Fork River Channel Migration Zone Map, Missoula County, Montana.** DTM teamed with Applied Geomorphology, Inc. to develop a Channel Migration Zone for twenty miles of the Clark Fork River from the Bitterroot River confluence, downstream to Huson, MT. Deliverables included a final CMZ map, a detailed project report and associated GIS data layers.
- **Missoula County PLACE Project, Montana.** The goal of the PLACE project is to compile GIS data for natural and cultural resources to assist with land use planning. DTM is reviewing and standardizing the datasets, as well as creating map sets to be used for public outreach and website promotion. An interactive web mapping application is also being developed.
- **Yellowstone River Channel Migration Zone Map, Missoula County, Montana.** This study involved creating Channel Migration Zone maps for the entire Yellowstone River corridor (565 miles) from Gardiner, Montana to the confluence with the Missouri River. This effort built on previous work performed on the Yellowstone River that included a geomorphic assessment, imagery acquisition and rectification, GIS-based inundation modeling, and physical feature mapping. Deliverables included a series of county-level tiled maps showing the CMZ mapping, a detailed report and associated GIS data.
- **Big Sky Incorporation Plan, Big Sky, MT.** Compiled and summarized socioeconomic data for the town of Big Sky. Important information such as property values and the locations of registered voters was compiled into a GIS. The resulting database will help local citizens draw boundaries and draft petitions as they work through the process of incorporating the town.
- **Yellowstone River Inundation Model, Yellowstone River, MT.** Conducted a flood inundation model using topographic and hydrological data for the Yellowstone. The model provides an approximate 100-year flood inundation boundary along the river from Gardiner to the confluence with the Missouri.

- **Yellowstone River Cumulative Effects Study, Yellowstone River Conservation Districts Council.** For the past several years DTM has been involved in several data creation and analysis projects in support of a federally-mandated cumulative effects study for over 600 miles of the Yellowstone River from Gardiner, Montana to its confluence with the Missouri River in North Dakota. This work has included the georeferencing and mosaicking of hundreds of historic aerial photographs, digitizing river features from the suites of photography, assessing geomorphic function, and analyzing the resulting data for human impacts over time.
- **Development Suitability Study, Ravalli County Planning Office, Hamilton, MT.** Completed a GIS-based suitability model using a multitude of ecological and biophysical data inputs. The model was created with assistance from a variety of local stakeholder groups in an effort to achieve broad agreement. The model will be used to help Ravalli County delineate zoning boundaries.
- **Emergency Action Plan Maps, Montana Department of Natural Resources and Conservation.** Developed and implemented a data conversion and archiving model for converting the current Emergency Action Plans for Montana dams to a GIS-based digital format. In total, DTM converted over 200 maps for 19 different dams. The data model includes data for both potential and imminent dam breaks, along with a XML-based phone calling tree to allow rapid access to emergency contacts. The data model is structured to integrate directly with Montana's Critical Infrastructure Database.
- **Montana State University College of Nursing, Distance to Hospital Service Study.** This effort focused on developing a set of GIS-based tools for researchers to assess the distance individuals travel to receive hospital care. Two tools were created for the researchers. The first is a straight-line travel distance and spider diagram methodology that calculates the distance from a patient's area code to the actual hospital address. The second tool utilizes ESRI ArcWeb Services to calculate the actual drive time and distance between the patient and hospital. This VB.NET application loops through a database table or query and sends the appropriate address information to an ESRI-hosted network routing server. The resulting drive time and distance is then written back to the database for statistical analysis. By offloading the processing to the ESRI server, DTM was able to avoid setting up and maintaining a national networked and geocoded roads database and the associated training for the College of Nursing staff. The resulting application can be run any time a new or updated data set is available.
- **Downtown Bozeman Building and Business Inventory, Bozeman, MT.** Developed a GIS-based inventory tool for the city of Bozeman. The database houses information about downtown building infrastructure as well as the names, owners and types of businesses located there. The database will help city managers and private investors make informed economic development decisions about the downtown district.
- **Grizzly Bear Habitat Cumulative Effects Model Analysis, Absaroka Ecological Consulting.** Completed a GIS-based summary analysis of Cumulative Effects data provided by the US Forest Service. The ModelBuilder extension for ArcGIS was used to summarize raster and vector datasets relating to habitat and infrastructure. The data was used to complete a Biological Assessment for the Blackfeet Indian Forest Management Plan.
- **Bozeman Pass Zoning Maps, SicoMontana/Hyalite Engineering.** Conducted a parcel inventory and created a zoning map for use in Gallatin County planning decisions. The residents of the Bozeman Pass area completed a petition to create a zoning district. We assisted with compiling lists of petition signers and mapping the associated parcels, and we mapped the proposed district boundary for submission to the Gallatin County Planning Office.