

Caroline Patrick-Birdwell

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Professional Experience

HAPPY DESERT GIS/ENVIRONMENTAL

CONSULTING – Tucson, AZ

2011 - present

Owner and Private Consultant

Recent Clients and Projects include:

Tucson Electric Power

- Spatial analysis for state-wide transmission line siting projects
- Spatial data management and modification
- CAD data conversion and dataset maintenance
- Exhibit preparation for easements and land rights acquisitions
- Map animation and video production
- Cartography for transmission line permitting
- Field data collection for electric infrastructure and access roads

Pima Community College

- Adjunct GIS Instructor for CAD Department, Downtown Campus
- Subject matter expert for GIS course design initiatives

Sonoran Land Resources

- Scope document maps and exhibit preparation
- Land rights and easement mapping for fiber installation projects
- Arizona State Land Rights of Entry map exhibits
- Map production for federally-required environmental protection processes

Lazarus, Silvyn, and Bangs, P.C.

- Map exhibits for re-zoning applications

Sonoran Joint Venture

- Spatial data development and editing for web-based mapping application
- Graphic design for website use

Tucson Historic Preservation Foundation

- Map and data creation for community participation related to the Reid Park Zoo expansion
- GIS support for Armory Park Streetscape Initiative and Barrio Viejo National Historic Landmark District
- Create base layers from historic maps and municipality GIS resources for data collection, research and reports
- Train staff and volunteers on use of ArcGIS and mobile collection strategies including ArcCollector and Survey123

Bowers Environmental

- Field data collection
- Hydrological and biological permit mapping for residential development
- Environmental compliance monitoring

Coalition for Sonoran Desert Protection

- Staff training in GIS
- Map and layer development for CDSP advocacy efforts

Tucson Audubon Society

- Custom cartography for 2017 Important Bird Area nominations

Partners for the Americas, Farmer-to-Farmer Program

- Data Collection and GIS Analysis for Farmer-to-Farmer and Agro Investment Corp., Browns Town, Jamaica
- Volunteer GIS Instructor for Universidad Agroforestal Fernando Arturo de Meriño in Jarabacoa, Dominican Republic
- Consultant on using GIS for climate change initiatives in the Dominican Republic

Arizona Antelope Foundation NFWF funded Pronghorn study

- Research and procure existing data and synthesize into comprehensive databases
- Develop geodatabases from field data collected from pronghorn movement corridors
- Build GIS layers based on pronghorn data, corridor barriers, and source data with terrain, flora and fauna of Sonoran Desert grasslands
- Collaborate with state and federal agencies as well as diverse conservation organizations

Tucson Clean and Beautiful Buffelgrass Initiative

- Recruit, train, and recognize volunteers for community-based public area buffelgrass removal and monitoring efforts
- Develop and maintain community-based mapping protocols for invasive species identification and tracking and produce cartographic products for project planning and monitoring
- Provide presentations and outreach on buffelgrass and invasive plant removal and management issues to potential community participants, partnering organizations and the community

Tucson/Pima Arts Council NEA Our Town Grant

- Report Research and Grant Document Preparation
- Design and lead GIS and spatial analysis activities for federally funded projects
- Develop and administer surveys for data collection
- Apply GIS expertise in cultural asset mapping project

TUCSON ELECTRIC POWER COMPANY – Tucson, AZ

2013 - 2017

Contractor/Senior GIS Analyst

- Create, edit, and manage spatial datasets for TEP Land Resources Department, including cultural and biological survey data as well as land rights and utility infrastructure
- Manage corporately-owned GIS data shared on Enterprise servers
- Train staff on GIS software and principles of cartography
- Perform spatial analysis and develop maps and reports on existing and planned infrastructure, land use and environmental planning concerns
- Develop and apply spatial analysis techniques as needed for utility access and right of ways
- Serve on inter-departmental team to develop protocols and implementation strategies for land rights data conversion
- Prepare cartographic exhibits for right of way documents
- Develop maps and other spatially-derived products used for substation and transmission line planning
- Produce maps, graphics, and presentations for TEP business development purposes
- Provide GIS support for other TEP departments as needed, including Security Services, Government and External Affairs, and Economic Development

SKY ISLAND ALLIANCE – Tucson, AZ

2011

Spatial Analysis and Cartographic internship

- In collaboration with SIA staff, was responsible for all project stages including project design, data management, and production of final cartographic products
- Produced maps with complex information for public use, including conservation publications,

grant proposals and website usage

- Collected field data using GPS and geo-referenced photographs and developed protocols for field data collection
- Designed and implemented spatial databases and cataloging protocols for spatial data management
- Performed a variety of GIS analysis functions, including spatial measurement, attribute query, vector overlay, and digital elevation modeling

Logistics Coordinator, Madrean Archipelago Biodiversity Assessment (MABA) 2011

- Organized semiannual bilingual biodiversity expeditions to Sonora, Mexico; managed all pre-trip, travel and on-site logistics, interfacing and coordinating with scientists, agency personnel, students and volunteers (approximately 40 per trip)
- Managed database (1,050,000 records) of plant and animal observations for MABA project
- Provided GIS support for projects

TUCSON AUDUBON SOCIETY – Tucson, AZ 2008 - 2013

Nature Shop Staff and Volunteer

- Survey team member for the Arizona Important Bird Areas program
- Assist with the daily operations of the Nature Shop, including book and gift sales, customer service, receiving/inventory management, and supervising shop volunteers
- Provide GIS support for projects as assigned

THE UNIVERSITY OF ARIZONA – Tucson, AZ 2002 - 2008

Director, Undergraduate Recruitment and International Programs, Eller College of Management

- Developed and managed international study abroad and experiential learning programs
- Taught courses and provided academic advising for Global Business Program
- Directed all recruitment efforts to draw and retain high-achieving high school students to the Eller College

Program Director, Summer Session & Development, Study Abroad & Student Exchange 1996 - 2002

- Developed and coordinated global study programs designed for all UA majors
- Oversaw programs and office budget
- Maintained student and program databases and information systems
- Developed and implemented marketing and advertising strategies for the unit

Education and Skills

THE UNIVERSITY OF ARIZONA – Tucson, AZ

- Master of Science in Geographic Information Systems Technology, 2011

SLIPPERY ROCK UNIVERSITY – Slippery Rock PA

- 2 Year Graduate Program, Park and Resource Management, 2010-2012

PIMA COMMUNITY COLLEGE – Tucson, AZ

- Civil Engineering CAD Certificate, expected December 2021
- Secondary Education Teaching Certification, 2010

UTAH STATE UNIVERSITY – Logan, UT

- Master of Arts in History, 1993
- Bachelor of Arts in Liberal Arts and Sciences, 1989

LANGUAGE

- Intermediate written and verbal Spanish proficiency

COMPUTER AND SOFTWARE CAPABILITIES

- ESRI ArcGIS Desktop Advanced and associated products (including ArcGIS Pro, ArcMap and ArcGIS Online)
- Microsoft Office Suite (Word, Excel, Access, and PowerPoint)
- Adobe Illustrator and Photoshop
- AutoCAD (intermediate proficiency)
- Revit (basic proficiency)

Professional Associations and Organization Membership

- ESRI Business Partner
- Society for Conservation GIS
- Tucson Audubon Society
- Tucson Clean and Beautiful
- Tucson Historic Preservation Foundation

References

Shannon Breslin, Manager, Land Resources

Tucson Electric Power Company Land Resources – RC131
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Cheryl Eamick, Owner and CEO

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Steve Grede, Computer Aided Design (CAD) Faculty

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