

**JEFF S. JENNESS**

3020 N. Schevene Blvd. • Flagstaff, AZ 86004 • USA • 928-607-4638

jeffj@jennessent.com

**CAREER OBJECTIVE**

To work as a GIS Professional, specializing in scientific research applications. I especially enjoy scientific research on wildlife and wildland ecosystems.

**EDUCATION****M.S. IN FORESTRY**

College of Ecosystem Sciences, Northern Arizona University

Master's Thesis: *Effects of fire on Mexican spotted owls in Arizona and New Mexico.*

1996 -2000

Flagstaff, Arizona

**M.A. IN EDUCATIONAL PSYCHOLOGY, COUNSELING**

Center for Excellence in Education, Northern Arizona University

1989 - 1993

Flagstaff, Arizona

**B.S. IN FORESTRY**

School of Forestry, Northern Arizona University

1986 - 1989

Flagstaff, Arizona

**PUBLICATIONS**

Jenness, J.S. 2009. *Analyzing raster elevation datasets.* Earth Imaging Journal. September / October 2009, 6(5):32-33.

Tagil, S. and J.S. Jenness. 2008. *GIS-based automated landform classification and topographic, landcover and geologic attributes of landforms around the Yazoren Polje, Turkey.* Journal of Applied Sciences. 8(6):910-921

Jenness, J.S., J. Dooley, J. Aguilar-Manjarrez, and C. Riva. 2007. *African water resource database: GIS-based tools for inland aquatic resource management. 1. concepts and application case studies.* CIFA Technical Paper. No. 33, Part 1. Food and Agriculture Organization of the United Nations. Rome, Italy. 165 pp.

Jenness, J.S., J. Dooley, J. Aguilar-Manjarrez, and C. Riva. 2007. *African water resource database: GIS-based tools for inland aquatic resource management. 2. technical manual and workbook.* CIFA Technical Paper. No. 33, Part 2. Food and Agriculture Organization of the United Nations. Rome, Italy. 305 pp.

Jenness, J.S. 2007. *Some thoughts on analyzing topographic habitat characteristics:* Originally published in June 2005 issue of *Remotely Wild* (newsletter of the GIS, Remote Sensing, and Telemetry Working Group of The Wildlife Society), and greatly expanded since then. Available at [http://www.jennessent.com/downloads/topographic\\_analysis\\_online.pdf](http://www.jennessent.com/downloads/topographic_analysis_online.pdf)

Hall, M.K., C.S. Walker, J.A. Weeks, L.P. Kendall, and J.S. Jenness. 2006. *Exploring Ocean Environments: GIS Investigations for the Earth Sciences, ArcGIS® Edition* (with CD-ROM), 2nd Edition. Brooks Cole. 176p.

Hall, M.K., C.S. Walker, J.A. Weeks, L.P. Kendall, and J.S. Jenness. 2006. *Exploring Tropical Cyclones: GIS Investigations for the Earth Sciences, ArcGIS® Edition*, 2nd Edition. Brooks Cole. 176p.

- Hall, M.K., C.S. Walker, J.A. Weeks, L.P. Kendall, and J.S. Jenness. 2006. *Exploring Water Resources: GIS Investigations for the Earth Sciences, ArcGIS® Edition*, 2nd Edition. Brooks Cole. 176p.
- Hall, M.K., C.S. Walker, J.A. Weeks, L.P. Kendall, and J.S. Jenness. 2006. *Exploring the Dynamic Earth: GIS Investigations for the Earth Sciences, ArcGIS® Edition*, 2nd Edition. Brooks Cole. 160p.
- Jenness, J.S. and J.J. Wynne. 2005. *Cohen's Kappa and classification table metrics 2.0: an ArcView 3.x extension for accuracy assessment of spatially explicit models*. U.S. Geological Survey Open-File Report OF 2005-1363. U.S. Geological Survey, Southwest Biological Science Center, Flagstaff, AZ, USA.
- Dickson, B., J.S. Jenness and P. Beier. 2005. *Influence of vegetation topography, and roads on cougar movement in southern California*. Journal of Wildlife Management. 69(1):264-276
- Jenness, J.S. 2004. *Calculating landscape surface area from digital elevation models*. Wildlife Society Bulletin. 32(3):829-839
- Jenness, J.S., P. Beier and J.L. Ganey. 2004. *Associations between forest fire and Mexican spotted owls in Arizona and New Mexico*. Forest Science. 50(6):765-772
- de Graaf, G., F.J.B. Marttin, J. Aguilar-Manjarrez, and J.S. Jenness. 2003. *Manual on the use of Geographical Information Systems in fisheries management and planning*. FAO Fisheries Technical Paper. No. 449. Rome, FAO. 173p.
- Dooley, J., J.S. Jenness, and J. Aguilar-Manjarrez. 2003. *The African Water Resource Database*. in Conf. Proc.; 21<sup>st</sup> International Cartographic Conference ICC 2003. International Cartographic Association (ICA). Durban, South Africa. p. 2154 - 2165.
- Jenness, J.S., P. Beier, J.L. Ganey, and C. Van Riper. 2000. *Effects of fire on Mexican spotted owls in Arizona and New Mexico*. M. S. Thesis. Northern Arizona University. Flagstaff, AZ. 131 pp.
- Ganey, J.L., W.M. Block, J.S. Jenness, and R.A. Wilson. 1999. *Home range and habitat use of Mexican spotted owls in ponderosa pine - Gambel oak forest*. Forest Science. 45(1):127-135.
- Ganey, J.L., W.M. Block, J.K. Dwyer, B.E. Strohmeyer, and J.S. Jenness. 1998. *Dispersal movements and survival rates of juvenile Mexican Spotted Owls*. Wilson Society Bulletin 110(2): 206-217.
- Ganey, J.L., W.M. Block, J.S. Jenness, and R.A. Wilson. 1997. *Comparative habitat use of sympatric Mexican spotted and great horned owls*. Journal of Wildlife Research 2(2):115-123

## PRESENTATIONS

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- Jenness, J., D. Majka and P. Beier. 2009. *Making good compromises in implementing wildlife corridor designs*. 10<sup>th</sup> Biennial Conference for Research on the Colorado Plateau. Flagstaff, AZ, USA.
- Beier, P., B. Brost and J. S. Jenness. 2009. *Conserving the arenas, not the actors: wildlife corridors for a changing climate*. The Wildlife Society 16<sup>th</sup> Annual Conference, Monterey, CA, USA.
- Beier, P. and J. Jenness. 2009. *Making good compromises in implementing wildlife corridor designs*. Annual Meeting, the Wildlife Society, Arizona and New Mexico Chapters, Gallup, NM, USA.
- Jenness, J. S., D. Majka and P. Beier. 2008. *Corridor Designer: Generating and Evaluating Corridors to Reconnect Fragmented Wildlife Habitats*. Quarterly Meeting, Northern Arizona GIS User Group. February 29, 2008, Camp Verde, AZ, USA.
- Jenness, J. S., J. Aguilar-Manjarrez, J. Dooley and C. Riva. 2008. *African water resource database: GIS-based tools for inland aquatic resource management*. Annual Meeting, American Fisheries Society, Arizona / New Mexico Chapter, Prescott, AZ, USA.

- Jenness, J. S. February 2007. *Some Thoughts on Analyzing Topographic Habitat Characteristics*. Annual Meeting, the Wildlife Society, Arizona and New Mexico Chapters, Albuquerque, NM, USA.
- Jenness, J. S. May 2006. *GIS Tools for Mapping and Analyzing Habitat Features using Digital Elevation Data*. Workshop on Predicting Salmon Habitat in Alaska. May 17 – 19, 2006, Sheraton Hotel. Anchorage, AK, USA.
- Jenness, J. S. June 1999. *Effects of Fire on Mexican Spotted Owls in Arizona and New Mexico*. Thesis Defense. Northern Arizona University, School of Forestry, College of Ecosystem Science and Management. Flagstaff, AZ, USA.
- Jenness, J. S., P. Beier and J. L. Ganey. February 1999. *Effects of Fire on Mexican Spotted Owls in Arizona and New Mexico*. Annual Meeting, the Wildlife Society, Arizona and New Mexico Chapters, Gallup, NM, USA.
- Jenness, J. S., P. Beier and J. L. Ganey. March 1999. *Effects of Fire on Mexican Spotted Owls in Arizona and New Mexico*. Mexican Spotted Owl Prescribed Fire Workshop, Prescott, AZ, USA.

## SEMINARS PRESENTED

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- Mahalanobis Distances. February 21, 2005. Invited Speaker. Presented to “Advanced Topics in Environmental Sciences and Policy” (NAU, ENV 698), instructed by Dr. John Prather.

## POSTERS PRESENTED

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- Jenness, J.S., D. Majka, B. Brost and P. Beier. *Corridor designer: A suite of ArcGIS tools to identify and evaluate corridors between fragmented habitat blocks*. Poster updated from 2007 version to include *Land Facet* tools.  
Shown At: 1) 30<sup>th</sup> Annual ESRI International User Conference. San Diego, California, USA (2010)  
***1<sup>st</sup> Place Winner, Best Instructional Presentation***
- Jenness, J.S. *Calculating areas and centroids on the sphere with raster and vector data*  
Shown At: 1) The Wildlife Society 16<sup>th</sup> Annual Conference. Monterey, California, USA (2009)
- Jenness, J.S. *Surface areas and ratios from DEMs*.  
Shown At: 1) 29<sup>th</sup> Annual ESRI International User Conference. San Diego, California, USA (2009)  
***1<sup>st</sup> Place Winner, Best Instructional Presentation***
- Jenness, J.S. *Calculating areas and centroids on the sphere*.  
Shown At: 1) Arizona/New Mexico Wildlife Society Meeting. Albuquerque, New Mexico, USA (2008)  
2) 28<sup>th</sup> Annual ESRI International User Conference. San Diego, California, USA (2008)  
***1<sup>st</sup> Place Winner, Best Instructional Presentation***
- Jenness, J.S. and J.J. Wynne. *Cohen's Kappa, classification tables and multi-criteria model selection process: an ArcView 3.x extension to verify and select spatially explicit predictive models*.  
Shown At: 1) US-IALE (United States – International Association for Landscape Ecology) 19<sup>th</sup> Annual Symposium. Las Vegas, Nevada, USA (March 30 - April 2, 2004)  
2) Arizona/New Mexico Wildlife Society Meeting. Gallup, New Mexico, USA (2005)  
3) 25<sup>th</sup> Annual ESRI International User Conference. San Diego, California, USA (2005)  
4) The Wildlife Society 14<sup>th</sup> Annual Conference. Tucson, AZ, USA (2007)
- Jenness, J.S. *Mahalanobis distances*.  
Shown At: 1) Arizona/New Mexico Wildlife Society Meeting. Gallup, New Mexico, USA (2005)  
2) 25<sup>th</sup> Annual ESRI International User Conference. San Diego, California, USA. (2005)  
3) The Wildlife Society 14<sup>th</sup> Annual Conference. Tucson, AZ, USA (2007)
- Jenness, J.S. *Calculating surface area from digital elevation models*.  
Shown At: 1) Arizona/New Mexico Wildlife Society Meeting. Gallup, New Mexico, USA (2005)

2) 25<sup>th</sup> Annual ESRI International User Conference. San Diego, California, USA. (2005)

Jenness, J.S., B. Dickson, and P. Beier. *Analyzing animal movement: an ArcView 3.x extension for assessing animal movement and use of habitats.*

Shown At: 1) 12<sup>th</sup> Annual Conference of the Wildlife Society. Madison, Wisconsin, USA (2005)  
2) Arizona/New Mexico Wildlife Society Meeting. Flagstaff, Arizona, USA (2006)

Jenness, J.S. *Grid tools for ArcView 3.x.*

Shown At: 1) Arizona/New Mexico Wildlife Society Meeting. Albuquerque, New Mexico, USA (2007)

Jenness, J.S. *Topographic position index (TPI) for ArcView 3.x.*

Shown At: 1) Arizona/New Mexico Wildlife Society Meeting. Albuquerque, New Mexico, USA (2007)

Jenness, J.S. *Repeating shapes for ArcView 3.x. and ArcGIS.*

Shown At: 1) Arizona/New Mexico Wildlife Society Meeting. Albuquerque, New Mexico, USA (2007)

Ganey, J.L., W.B. Block, J.S. Jenness, B.E. Strohmeyer, S. Miller & D.P. Huebner. *Dietary overlap between sympatric Mexican spotted and great horned owls in Arizona.*

Shown At: 1) Arizona/New Mexico Wildlife Society Meeting. Albuquerque, New Mexico, USA (2007)  
2) The Wildlife Society 14<sup>th</sup> Annual Conference. Tucson, Arizona, USA (2007)

Majka, D., J.S. Jenness, and P. Beier. *Corridor designer: A suite of ArcGIS tools to identify and evaluate corridors between fragmented habitat blocks.*

Shown At: 1) 27<sup>th</sup> Annual ESRI International User Conference. San Diego, California, USA. (2007)  
2) The Wildlife Society 14<sup>th</sup> Annual Conference. Tucson, Arizona, USA (2007)  
3) Arizona/New Mexico Wildlife Society Meeting. Albuquerque, NM, USA (2008)

## SOFTWARE PRESENTED

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Jenness, J.S. 2010. *DEM Surface Tools* 30<sup>th</sup> Annual ESRI International Users Conference - Application Fair, San Diego, California. **1<sup>st</sup> Place winner, Best Desktop Application Category**

Jenness, J.S., B. Brost and P. Beier. 2010. *Land Facet Corridor Designer: 30<sup>th</sup> Annual ESRI International Users Conference - Application Fair, San Diego, California.* **2<sup>nd</sup> Place winner, Best Desktop Application Category**

Jenness, J.S. 2009. *Surface Area and Ratio.* 29<sup>th</sup> Annual ESRI International Users Conference - Application Fair, San Diego, California. **2<sup>nd</sup> Place winner, Best Desktop Application Category**

Jenness, J.S. 2008. *Tools for Graphics and Shapes.* 28<sup>th</sup> Annual ESRI International Users Conference - Application Fair, San Diego, California. **1<sup>st</sup> Place winner, Best Desktop Application Category**

Majka, D., J.S. Jenness and P. Beier. 2007. *Corridor Designer: A Suite of ArcGIS Tools to Identify and Evaluate Corridors Between Fragmented Habitat Blocks.* 27<sup>th</sup> Annual ESRI International Users Conference - Application Fair, San Diego, California.

Jenness, J.S. 2006. *Repeating Shapes for ArcView 3.x and ArcGIS.* 26<sup>th</sup> Annual ESRI International Users Conference - Application Fair, San Diego, California.

Jenness, J.S. 2006. *Grid Tools for ArcView 3.x.* 26<sup>th</sup> Annual ESRI International Users Conference - Application Fair, San Diego, California.

Jenness, J.S. 2006. *Topographic Position Index for ArcView 3.x.* 26<sup>th</sup> Annual ESRI International Users Conference - Application Fair, San Diego, California.

Jenness, J.S. 2005. *Owl Project Map Generator and Data Entry Tool.* 25<sup>th</sup> Annual ESRI International Users Conference - Application Fair, San Diego, California.

Jenness, J.S. 2005. *Grid and Theme Regression.* 25<sup>th</sup> Annual ESRI International Users Conference - Application Fair, San Diego, California.

- Jenness, J.S. 2005. *Script and Dialog Tools*. 25<sup>th</sup> Annual ESRI International Users Conference - Application Fair, San Diego, California.
- Jenness, J.S. 2004. *Mahalanobis distances*. 24<sup>th</sup> Annual ESRI International Users Conference - Application Fair, San Diego, California. **1<sup>st</sup> Place winner, Avenue Category**
- Jenness, J.S., J. Dooley, J. Aguilar-Manjarrez and C. Riva. 2004. *The African water resource database*. 24<sup>th</sup> Annual ESRI International Users Conference - Application Fair, San Diego, California. **2<sup>nd</sup> Place winner, Avenue Category**
- Jenness, J.S. 2004. *Calculating surface area from digital elevation models*. 24<sup>th</sup> Annual ESRI International Users Conference - Application Fair, San Diego, California.
- Jenness, J.S. and J.J. Wynne. 2004. *Kappa Statistics*. 24<sup>th</sup> Annual ESRI International Users Conference - Application Fair, San Diego, California.

## WORKSHOPS PRESENTED

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Majka, D., J.S. Jenness and P. Beier. *Corridor Designer Workshop: A Suite of ArcGIS Tools to Identify and Evaluate Corridors Between Fragmented Habitat Blocks*.

- Workshops Held At:
- 1) September 9, 2007: BLM Training Center in Phoenix, Arizona, USA.
  - 2) September 22, 2007: The Wildlife Society 14<sup>th</sup> Annual Conference. Tucson, AZ, USA
  - 3) October 12, 2007: The Nature Conservancy. Boulder, CO, USA.
  - 4) November 30, 2007: San Diego State University. San Diego, CA, USA.
  - 5) December 7, 2007: Elkhorn Slough. Watsonville, CA, USA.

Beier, P. and J.S. Jenness. *Wildlife Corridors for a Changing Climate*

- Workshops Held At: 1) October 20, 2009: Forest Service Ecologists Annual Meeting, Traverse City, Michigan, USA.

## CERTIFICATIONS

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CERTIFIED GIS PROFESSIONAL

2005

GIS Certification Institute, <http://www.gisci.org>, Certification #00050453

## EMPLOYMENT HISTORY

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### INDEPENDENT CONSULTANT

*Jenness Enterprises*  
*GIS Analysis and Application Design*  
 3020 N. Schevene Blvd.  
 Flagstaff, AZ 86004 USA

**JANUARY 2000 – PRESENT**  
*Flagstaff, Arizona and Rome, Italy*

SUPERVISOR: Self-Employed  
 Many References Available

My business primarily involves developing customized GIS applications to help researchers and managers analyze and use spatial information. I also conduct analyses on spatial data, mainly to identify habitat characteristics of wildlife species. A small sample of my contracts include:

- A long-term contract with the University of Arizona and the Saguaro project (<http://www.scieds.com/saguaro/index.html>) to develop the GIS software for the Saguaro educational modules.
- A long-term contract with Northern Arizona University to develop corridor software to reconnect fragmented habitat patches..
- Multiple long-term contracts with the United Nations Food and Agriculture Office in Rome, Italy. Projects included software development to analyze watershed characteristics and upstream/downstream consequences of management actions (with software distributed to developing countries in Africa), multiple projects to analyze world marine datasets to identify marine aquaculture potential, and co-authorship of an ArcGIS training manual. These contracts required me to relocate to Rome for 3 months.

- A long-term contract with Public Safety Network in Ventura, California, to develop tools to analyze 911 cell phone calls.
- A contract with the University of Montana to develop software to analyze human-grizzly bear conflicts on private lands in Montana.
- A contract with Helmut Kruckenburg of the University Osnabrück in Germany, to develop software to help identify European white-fronted goose migration routes.
- A contract with Jan Ekebom of the University of Turku in Finland, to develop software to help analyze Finnish coastal biodiversity.
- Several contracts with McLennan County 9-1-1 (Waco, Texas) to develop applications to help their emergency service agencies.

I conduct business through my web site at <http://www.jennessent.com>. I have developed a number of free ArcView and ArcGIS applications that have been downloaded over 250,000 times, each of which has an on-line manual and description that will allow you to review my work. Several of my extensions and posters have won awards at the annual ESRI International User Conferences. I encourage anyone considering this résumé to review my extensions to get a sense of the quality and type of GIS services that I can provide. The web addresses for my ArcView 3.x and ArcGIS extensions are [http://www.jennessent.com/arcview/arcview\\_extensions.htm](http://www.jennessent.com/arcview/arcview_extensions.htm) and [http://www.jennessent.com/arcgis/arcgis\\_extensions.htm](http://www.jennessent.com/arcgis/arcgis_extensions.htm).

I am also skilled at Visual Basic and I've written (and offer for sale) a popular measurement unit conversion program (*Unit Converter*, see [http://www.jennessent.com/unit\\_conv/index.htm](http://www.jennessent.com/unit_conv/index.htm)).

#### **GS-9 WILDLIFE BIOLOGIST**

*U. S. Forest Service  
Rocky Mountain Experimental Station  
2500 S. Pine Knoll Drive  
Flagstaff, AZ 86004 USA*

**MAY 1998-JAN 2001, JULY 2002-JUNE 2006**

*Flagstaff, Arizona*

SUPERVISOR: Dr. Joseph Ganey  
(928) 556-2156 or (928) 556-2001

Dr. Ann Lynch  
(520) 388-8372

I helped to design and conduct a large-scale Mexican spotted owl monitoring project extending over six National Forests in Arizona and New Mexico. I trained and supervised 8 biological technicians capturing and banding owls in primarily wilderness areas of the Gila National Forest in southern New Mexico.

I spent several months analyzing landscape characteristics of our study area to look for correlates with our spotted owl demographic data. This GIS work was almost entirely my responsibility although I trained others to assist me in some aspects of it. Over the course of this project I had to collect, organize and often create large amounts of data in numerous formats including ArcInfo coverages in various projections and datums, ArcView shapefiles, Digital Raster Graphics, ArcInfo Grids, ArcInfo TINs, digital imagery, Digital Elevation Models (DEM and SDTS), and simple database files. I am very proficient with ArcGIS, ArcView 3.x, Spatial Analyst, 3D Analyst, Avenue Programming and Visual Basic Programming.

In addition to modeling landscape characteristics for our spotted owl monitoring project, I often assisted other scientists in our lab with various GIS and GPS projects. I worked with a visiting scientist from Australia on a project to estimate vegetation type and soil moisture using infrared aerial photography and the ERDAS IMAGINE software, and I have assisted numerous graduate students working in our office by writing specific ArcView applications to aid them in their research.

I conducted a GIS-based analysis of historic disease and insect damage patterns in the Pinaleno, Chiricahua, Catalina and Huachuca mountains.

I received four awards for Outstanding Efforts in support of the Spotted Owl Monitoring Program during these years.

**GRADUATE ASSISTANT**

**1996 -1998**

*School of Forestry  
Northern Arizona University  
NAU P.O. Box 15018  
Flagstaff, AZ 86011 USA*

*Flagstaff, Arizona*

SUPERVISOR: Dr. Paul Beier  
(928) 523-3031

I designed and conducted a highly GIS- and Statistics-intensive thesis project examining the effects of various levels of forest fire burning within Mexican spotted owl territories. This project required me to hire and supervise 6 technicians to survey 64 spotted owl territories in remote locations of Arizona and New Mexico. I developed my own index of topographic roughness using Digital Elevation Models and ArcView Spatial Analyst. I was awarded my Masters degree in May, 2000 and my thesis was published by NAU in June, 2000.

**GS-7 SUPERVISORY BIOLOGICAL TECHNICIAN**

**1994 - 1996**

*U. S. Forest Service  
Rocky Mountain Experimental Station  
2500 S. Pine Knoll Drive  
Flagstaff, AZ 86004 USA*

*Flagstaff, Arizona*

SUPERVISOR: Dr. Joseph Ganey  
(928) 556-2156 or (928) 556-2001

From the summer of 1994 through the spring of 1995 I hired for and supervised a spotted owl juvenile dispersal study in which I was responsible for keeping track of widely-roaming juvenile owls from aircraft and from the ground. In the summer of 1995 I designed and initiated a spotted owl home range telemetry study on the Chevelon ranger district. In this case I hired, trained and supervised 3 employees to trap spotted owls and monitor their activities in the canyons around Chevelon.

Additional duties during this time included:

- *Snowmobile/ATVs/Defensive Driving:* I was one of the designated snowmobile and ATV trainers in our office. For a time I was responsible for maintaining our fleet of vehicles and I taught defensive driving courses for new employees.
- *Radios:* In an effort to create a safer working environment, I developed a radio communications program for our office in which we now have access to all USFS Region 3 radio frequencies, several AZ State Land Department frequencies and a number of weather channels.

I received two awards for Excellence in Spotted Owl Research during these two years.

**GS-5 BIOLOGICAL TECHNICIAN**

**1990 – 1994**

*U. S. Forest Service  
Rocky Mountain Experimental Station  
2500 S. Pine Knoll Drive  
Flagstaff, AZ 86004 USA*

*Flagstaff, Arizona*

SUPERVISOR: Dr. Joseph Ganey  
(928) 556-2156 or (928) 556-2001

I participated in and supervised a number of projects relating to spotted owl research. One of my primary duties was to trap, band, attach radios to and monitor great horned and Mexican spotted owls as part of a home range and habitat study, and I was listed as a secondary author on two papers resulting from this work. I have also participated in a great deal of small mammal trapping in a mark-and-recapture study we conducted concurrent with the home range/habitat study.

I supervised 13 technicians in the summer of 1993 gathering habitat data for the home range/habitat study and I received an award for innovations I developed on this project. During the winter of 1993-1994 I hired, trained and supervised 6 technicians who traveled throughout Arizona, New Mexico and southern Utah compiling US Forest Service spotted owl data for use by the Mexican spotted owl recovery team.

I was also responsible for learning and using Global Positioning System equipment for our research and I still serve as a consultant with other scientists to help them utilize the technology. I have taught classes on GPS to both Forest Service personnel and NAU students and I wrote a paper that was used in the USFS Nationwide Forestry Applications Program GPS training manual.

I received 2 awards for Excellence in Spotted Owl Research during these four years.

**BIOLOGICAL TECHNICIAN**

**SUMMER 1988 & 1989**

*U. S. Forest Service  
Cibola National Forest  
Mt. Taylor Ranger District  
Grants, NM 87020 USA*

*Grants, New Mexico*

SUPERVISOR: Paula Crumpton  
(505) 287-8833

I conducted wildlife and rare plant surveys, fought forest fires, and supervised volunteer groups in the construction of wildlife habitat improvement structures.

**FIRE PREVENTION PROGRAM VOLUNTEER**

**1986**

*U. S. Forest Service  
Santa Catalina Ranger District  
Tucson, AZ 87515*

*Tucson, Arizona*

SUPERVISOR: Ted Moore  
(928) 629-5101

I helped to assemble and present programs on fire prevention and safety and hiking safety to various elementary schools in Tucson, Arizona.

**CRISIS COUNSELOR - VOLUNTEER**

**1987 - 1999**

*Victim/Witness Services of Coconino County  
13 N. San Francisco Street, Suite 201  
Flagstaff, AZ 86001 USA*

*Flagstaff, Arizona*

SUPERVISOR: Joanie Smith  
(928) 779-6163

I have over 11,000 hours on-call experience as a crisis counselor. I assisted local law enforcement agencies and the Flagstaff Medical Center by providing on-site crisis intervention for victims of crime and crisis, including such things as rape, suicide, child abuse and molestation, death of loved ones (ranging from accidental and natural death to suicide and homicide), domestic violence and substance abuse. I supervised and helped train inexperienced volunteers. Victim/Witness Services was recognized as the Flagstaff Organization of the Year during my tenure there.

I received two awards for Volunteer of the Month and one award for Volunteer of the Year from Victim/Witness Services during my 12 years there.

**ADDITIONAL RELEVANT TRAINING**

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- INTRODUCTION TO PROGRAMMING ARCOBJECTS WITH VBA: ESRI Class, November, 2005. Sacramento, CA
- EXTENDING THE ARCGIS DESKTOP APPLICATIONS: ESRI Class, December, 2005. Olympia, WA.
- LEARNING ARCGIS 9: ESRI Virtual Campus class, November 2004.

- WORKING WITH ARCVIEW SPATIAL ANALYST: ESRI Class, May, 2000. Chicago, IL
- PROGRAMMING WITH AVENUE: ESRI Class, June, 2000. Boulder, CO
- PROGRAMMING WITH VISUAL BASIC: Coconino Community College class. Jan-May, 2000. Flagstaff, AZ
- SUPERVISOR’S DEVELOPMENT COURSE: 2-week course held by Arizona Regional Community Policing Institute. May - June, 1998. Flagstaff, AZ
- SUPERVISOR TRAINING: US Forest Service. November, 1998. Flagstaff, AZ
- ARCINFO: Northern Arizona University Class. Jan-May, 1997. Flagstaff, AZ
- GLOBAL POSITIONING SYSTEM: U.S. Forest Service, 1994. Salt Lake City, UT

**SKILLS**

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- A VARIETY OF SOFTWARE PACKAGES, including:
  - GIS: ArcView 3.3, Spatial Analyst 2.0, 3D Analyst, ArcINFO 7, PC/ArcINFO 3.5, ArcGIS (ArcView 9.x)
  - SPSS 9.0 and S-Plus 7, 8
  - Microsoft Office Software
  - Adobe Creative Suite (Photoshop CS, Illustrator CS, Acrobat 6, InDesign CS, GoLive CS)
  - Visual Basic 6 programming language
  - Visual Studio 2005, 2008 programming languages
  - WordPerfect 10, Quattro Pro 8, Paradox 7, CorelDraw 6 and Corel PhotoPaint 6
  - ProCite 5
  - Windows 95, 2000, XP
- TRAINING: I have conducted multiple classes for FS personnel and others, teaching them about GIS, GPS and Radio Usage.
- PROGRAMMING LANGUAGES: Visual Basic, .NET, HTML, Javascript, and Avenue.
- Global Positioning System, especially Trimble products
- Radio telemetry
- Radio communications and frequency programming
- Statistical analysis
- Photography, especially wildlife and landscapes
- Creative and good at making things, especially field equipment
- Good with public interaction
- Experience in training groups of people
- Snowmobiles, ATVs, 4-wheel drive on bad roads
- Spotted owl surveying

**SERVICE TO PROFESSIONAL ORGANIZATIONS**

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American Society for Photogrammetry and Remote Sensing	2000 – Present
American Ornithologists’ Union	1998 – Present
Ecological Society of America	2010 – Present
GIS Certification Institute	2008 – Present
North American Cartographic Information Society	2006 – Present
Society of American Foresters	1989 – Present
Society for Conservation and GIS	2006 – Present
Wildlife Society	1995 – Present
<i>Chairman, Spatial Ecology and Telemetry Working Group</i>	2008 – Present

### FOREST SERVICE AWARDS RECEIVED

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Certificate of Merit for sustained superior performance in providing GIS and other technical support to scientists and other personnel in RM-4251	August, 2005
Certificate of Merit for exceptional performance in developing technical GIS support tools to aid in a study on the effects of fuels treatments on Mexican spotted owls and their prey.	August, 2003
Certificate of Merit for Superior Achievement in support of on-going efforts to design and implement a population monitoring program for the Mexican Spotted Owl	September, 1999
Certificate of Merit for Outstanding Efforts in Support of a Program to Monitor Population Trend of Mexican Spotted Owls	September, 1998
Certificate of Merit for Exceptional Service in Efforts to Recover the Threatened Mexican Spotted Owl	September, 1994
Certificate of Merit For Performing Beyond Normal Expectations in the Research on the Ecology of the Mexican Spotted Owl	September, 1993
Certificate of Merit for Excellence in Spotted Owl Research	October, 1992
Certificate of Merit for Excellence in Spotted Owl Research	September, 1991

### GRANTS RECEIVED

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Effects of wildfires in Mexican Spotted Owl territories on occupancy rates. (U. S. Forest Service, 1996. \$110,000.)

### RELEVANT REFERENCES

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### INTERESTS AND ACTIVITIES

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I grew up on the Navajo reservation in northeastern Arizona and I still have a strong attachment to the Navajo culture. My hobbies are maps, hiking, computer programming, wildlife photography, woodworking, playing guitar, simple electronics and studying history (especially World War II and the Holocaust). I love to build things.