

JEFF S. JENNESS

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CAREER OBJECTIVE

To be a GIS Professional and Spatial Scientist, specializing in the study of spatial phenomena. I especially enjoy research on wildlife and wildland ecosystems, and research that makes use of the shape of the land.

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 – BOOKS, MONOGRAPHS AND LONG TECHNICAL REPORTS

Kapetsky, J.M., J. Aguilar-Manjarrez and **J. Jenness**. 2013. *A global assessment of potential for offshore mariculture development from a spatial perspective*. FAO Fisheries and Aquaculture Technical Paper No. 549. Rome, FAO. 181 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. 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.

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.

PUBLICATIONS – BOOK CHAPTERS

- Beyer, H.L., **J.S. Jenness**, and S. Cushman. 2010. *Components of spatial information management in wildlife ecology: software for statistical and modeling analysis*. Chapter 14 in *Spatial Complexity, Informatics, and Wildlife Conservation*, Editors Sam Cushman and Falk Huettmann. Springer.
- Meaden, G.J., **J. Jenness** and S. Walker. 2013. *Preparing data for GIS use*. Chapter 5 in *Advances in Geographic Information Systems and Remote Sensing for Fisheries and Aquaculture*, Editors Geoffery J. Meaden and José Aguilar-Manjarrez. FAO Fisheries and Aquaculture Technical Paper No. 552. Rome, FAO. 425 pp.
- Meaden, G.J., **J. Jenness** and S. Walker. 2013. *GIS Functionality*. Chapter 7 in *Advances in Geographic Information Systems and Remote Sensing for Fisheries and Aquaculture*, Editors Geoffery J. Meaden and José Aguilar-Manjarrez. FAO Fisheries and Aquaculture Technical Paper No. 552. Rome, FAO. 425 pp.

PUBLICATIONS – GENERAL, PEER-REVIEWED

- Yocom, L. L., **J. S. Jenness**, P. Z. Fulé, and A. E. Thode. 2022. Fire Severity in Reburns Depends on Vegetation Type in Arizona and New Mexico, U.S.A. *Forests* 13:12. <<https://www.mdpi.com/1999-4907/13/11/1957/htm>>. Accessed 19 Nov 2022.
- Stevens, L. E., K. Holcomb, C. Crookshanks, D. W. Sada, **J. Jenness**, and K. Szabo. 2022. *A Strategy for Conservation of Springsnails in Nevada and Utah, USA*. *Sustainability* 14(15), 9546:1–12. <<https://www.mdpi.com/2071-1050/14/15/9546/pdf>>. Accessed 3 Aug 2022.
- Schenk, E., **J. Jenness**, and L.E. Stevens. 2022. *Declines in an aridland river's baseflow due to increasing air temperature: implications for springs ecosystems*. *Journal of the Arizona-Nevada Academy of Science* 49:92–98. <<https://bioone.org/journals/journal-of-the-arizona-nevada-academy-of-science/volume-49/issue-2/036.049.0206/Declines-in-an-Aridland-Rivers-Base-Flow-Due-to-Increasing/10.2181/036.049.0206.short>>. Accessed 23 Feb 2022.
- Stevens, L. E., A. A. Aly, S. M. Arpin, I. Apostolova, G. M. Ashley, P. Q. Barba, J. Barquín, A. Beauger, L. Benaabidate, S. U. Bhat, L. Bouchaou, M. Cantonati, T. M. Carroll, R. Death, K. A. Dwire, M. F. Felipe, R. J. Fensham, A. E. Fryar, R. P. i Garsaball, V. Gjoni, D. S. Glazier, N. Goldscheider, J. T. Gurrieri, R. Guðmundsdóttir, A. R. Guzman, M. Hájek, K. Hassel, T. Heartsill-Scalley, J. S. i Herce, D. Hinterlang, J. H. Holway, J. Ilmonen, **J. S. Jenness**, J. Kapfer, I. Karaouzas, R. L. Knight, A.-K. Kreiling, C. H. Lameli, J. D. Ledbetter, N. Levine, M. D. Lyons, R. E. Mace, A. Mentzafou, P. Marle, N. Moosdorf, M. K. Norton, A. Pentecost, G. G. Pérez, B. Perla, A. A. Saber, D. Sada, S. Segadelli, K. Skaalsveen, A. E. Springer, S. K. Swanson, B. F. Schwartz, P. Sprouse, M. Tekere, B. W. Tobin, E. A. Tshibalo, and O. Voldoire. 2021. *The Ecological Integrity of Spring Ecosystems: A Global Review*. Reference Module in Earth Systems and Environmental Sciences. Elsevier. <<https://www.sciencedirect.com/science/article/pii/B9780128211397001112>>.
- Moore, M. M., **J. S. Jenness**, D. C. Laughlin, R. T. Strahan, J. D. Bakker, H. E. Dowling, and J. D. Springer. 2021. *Cover and density of southwestern ponderosa pine understory plants in permanent chart quadrats (2002-2020+)*. *Ecology*. Data Paper. <<https://esajournals.onlinelibrary.wiley.com/doi/10.1002/ecy.3661>>

- Wynne, J. J., **J. S. Jenness**, D. L. Sonderegger, T. N. Titus, and N. Cabrol. 2021. *Advancing Cave Detection Using Terrain Analysis and Thermal Imagery*. *Remote Sensing* 13:3578, 1–25. <<https://www.mdpi.com/2072-4292/13/18/3578/pdf>>. Accessed 8 Sep 2021.
- Jenness, J.S.**, A. Mendoza, B. Mann, L. Stevens, J. Ledbetter and A. Hazelton. **In Press**. *Gimme Shelter! Springsnails in an Arid Land*. *Guerrilla Cartography Shelter Atlas*. <<https://www.guerrillacartography.org/>>
- Keeley, A.T.H., Beier, P. and **J. Jenness**. 2021. *Connectivity metrics for conservation planning and monitoring*. *Biological Conservation*. 255:109008
- Stevens, L.E., **J. Jenness** and Ledbetter, J.D. 2020. *Springs and springs-dependent taxa of the Colorado river basin, southwestern North America: geography, ecology and human impacts*. *Water*. 12(5),1501. 30 pp. <https://www.mdpi.com/2073-4441/12/5/1501>
- Yocum, L.L., **J. Jenness**, P.Z. Fulé, and A.E. Thode. 2019. *Previous fires and roads limit wildfire growth in Arizona and New Mexico, U.S.A*. *Forest Ecology and Management*. Volume 449, 1 October 2019, 117440. 7 pp.
- Jenness, J.**, S.W.K. van den Burg, J. Aguilar-Manjarrez, and M. Torrie. 2018. *Spatial datasets to define operational boundaries within four marine basins delineated by distance from shore, depth, EEZ and protected status, accompanied by maps and statistical summary tables*. *Data in Brief*. 21:2638-2642
- van den Burg, S. W. K., J. Aguilar-Manjarrez, **J. Jenness**, and M. Torrie. 2019. *Assessment of the geographical potential for co-use of marine space, based on operational boundaries for Blue Growth sectors*. *Marine Policy*. 100:43-57
- Kim, Y.-S., S. Latifah, M. Afifi, M. Mulligan, S. Burk, L. Fisher, E. Siwicka, K. Remoundou, M. Christie, S. M. Lopez, and **J. Jenness**. 2018. *Managing forests for global and local ecosystem services: a case study of carbon, water and livelihoods from eastern Indonesia*. *Ecosystem Services*. 31:153-168.
- Rebollo, S., S. Martínez-Hestekamp, G. García-Salgado, L. Pérez-Camacho, J. M. Fernández-Pereira, and **J. Jenness**. 2017. *Spatial relationships and mechanisms of coexistence between dominant and subordinate top predators*. *Journal of Avian Biology*. 48:1226–1237.
- Ganey, J. L., G.C. White, **J. Jenness**, and S.C. Vojta. 2015. *Mark–recapture estimation of snag standing rates in Northern Arizona mixed-conifer and ponderosa pine forests*. *The Journal of Wildlife Management*. 79(8):1369-1377
- Ganey, J.L., B.J. Bird, L.S. Baggett, and **J. Jenness**. 2015. *Density of large snags and logs in northern Arizona mixed-conifer and ponderosa pine forests*. *Forest Science*. 61(2):353-362
- Drake, J.C., **J.S. Jenness**, J. Calvert and K.L. Griffis-Kyle. 2015. *Testing a model for the prediction of isolated waters in the Sonoran Desert*. *Journal of Arid Environments*. 118:1-8
- Ganey, J.L., J.P. Ward Jr., **J.S. Jenness**, W.M. Block, S. Hedwall, R.S. Jonnes, D.L. Apprill, T.A. Rawlinson, S.C. Kyle and S.L. Spangle. 2014. *Use of protected activity centers by Mexican spotted owls in the Sacramento Mountains, New Mexico*. *Journal of Raptor Research*. 48(3):210-218
- Ganey, J. L., and **J. S. Jenness**. 2013. *An apparent case of long-distance breeding dispersal by a Mexican spotted owl in New Mexico*. Res. Note RMRS-RN-53WWW. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 5 p.
- Rudnick, D.A., S. J. Ryan, P. Beier, S.A. Cushman, F. Dieffenbach, C.W. Epps, L.R. Gerber, J. Hartter, **J.S. Jenness**, J. Kintsch, A.M. Merenlender, R.M. Perkl, D.V. Preziosi, and S.C. Trombulak. 2012. *The role*

- of landscape connectivity in planning and implementing conservation and restoration priorities. Issues in Ecology.* 16:1-20
- 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.** 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.
- 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. Strohmeier, 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

PUBLICATIONS – GENERAL, NON-PEER REVIEWED

- Holcomb, K., C. Crookshanks, and **J. S. Jenness**. 2021. *Conservation agreement and strategy for springsnails in Nevada and Utah.* The waterSPOT, Nevada Water Resources Association Newsletter 2:27. Available at <https://www.kelmanonline.com/httpdocs/files/NWEA/thewaterspot2021-issue2/index.html>
- Moore, Margaret M.; **Jenness, Jeffrey S.**; Laughlin, Daniel C.; Strahan, Robert T.; Bakker, Jonathan D.; Dowling, Helen E.; Springer, Judith D. 2021. *Data for: Cover and density of southwestern ponderosa pine understory plants in permanent chart quadrats (2002-+).* Fort Collins, CO: Forest Service Research Data Archive. <https://doi.org/10.2737/RDS-2021-0092>
- Jenness, J. S.**, J. J. Wynne, M. D. Jhabvala, and N. Cabrol. 2021. *Aircraft-Borne Thermal Imagery and Derived Terrain Analysis Layers, Pisgah Lava Field, California.* U.S. Geological Survey data release, USGS Data Release Products, U.S. Geological Survey, ScienceBase-Catalog. <<https://doi.org/10.5066/P9NF0L2I>>. Accessed 7 Sep 2021.
- Holcomb, K., C. Crookshanks, and **J. S. Jenness**. 2021. *Conservation agreement and strategy for springsnails in Nevada and Utah.* The waterSPOT, Nevada Water Resources Association Newsletter 1:38–39. Available at <https://www.kelmanonline.com/httpdocs/files/NWEA/thewaterspot2021-issue1/index.html>

- Schenk, E. R., **J. S. Jenness**, and L. E. Stevens. 2018. *Springs distribution, flow, and associated species in the Verde River basin, Arizona*. Springs Stewardship Institute Technical Report to One for the Verde, Museum of Northern Arizona. 47 pp.
- Wynne, J. J., **J. Jenness**, D. L. Sonderegger, and M. D. Jhabvala. 2016. *Terrain Analysis of Thermal Imagery for Terrestrial Cave Detection*. Unpublished report on file with Instrument Systems and Technology Division, NASA Goddard Space Flight Center, Greenbelt, MD.
(https://www.researchgate.net/profile/Jut-Wynne/publication/317490205_Terrain_analysis_of_thermal_imagery_for_terrestrial_cave_detection/links/598caf5aaca272e57ad1a9c7/Terrain-analysis-of-thermal-imagery-for-terrestrial-cave-detection.pdf).
- Salvador R, S.M. Hesterkamp, G.G. Salgado, L.P. Camacho, J.M.F. Pereira y **J. Jenness**. 2014. *Las rapaces forestales diurnas en la naturaleza ¿rivalas o socios?* Biología Y Conservación. Anuario AECCA 2014, 17-27.
- Kapetsky, J.M., J. Aguilar-Manjarrez, and **J. Jenness**. 2014. *The what, where and how much of offshore mariculture: global development opportunities from a spatial perspective*. Conference Proceedings of Conference on Offshore Mariculture 2014. Naples, Italy. April 9--11, 2014.
(<http://www.offshoremiculture.com/home>). 13-24
- Griffis-Kyle, K.L. and **J. Jenness**. 2013. *Amphibian and insect biodiversity in created wetlands of the USAF, BMGR*. Annual report submitted to Luke Air Force Base 56 RMO/ESM. 67 pp.
- Griffis-Kyle, K.L. and **J. Jenness**. 2011. *Amphibian and insect biodiversity in created wetlands of the USAF, BMGR*. Annual report submitted to Luke Air Force Base 56 RMO/ESM. 41 pp.
- Jenness, J.S.** 2009. *Analyzing raster elevation datasets*. Earth Imaging Journal. September / October 2009, 6(5):32-33.
- Beier, P., D. Majka and **J. Jenness**. 2007. *Conceptual steps for designing wildlife corridors*. CorridorDesign.org. Available at
<http://corridordesign.org/dl/docs/ConceptualStepsForDesigningCorridors.pdf>
- 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
- Dooley, J., **J.S. Jenness**, and J. Aguilar-Manjarrez. 2003. *The African Water Resource Database*. in Conf. Proc.; 21st 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.
- Jenness, J.S.** 1986. *The Navajo Squaw Dance*. Pages 64–73 in L. Johnson, P. Malone, and M. Diogenes, editors. *A Student's Guide to Freshman Composition. Seventh Edition*. Bellwether Press, University of Arizona.

PUBLICATIONS – MAPS

220 butterfly range maps for Rich Bailowitz and Jim Brock's lovely book of Southeastern Arizona Butterflies (Bailowitz, R., and J. Brock. 2022. *Southeastern Arizona Butterflies*. Wheatmark Publishing Company, Tucson, AZ. 356 pp.)

Greater Walnut Canyon Region, in “Walnut Canyon” edition of *Plateau* magazine. 2016. Museum of Northern Arizona. Vol. 8, Num. 1. Map on foldout centerfold.

Three maps describing Rio de Flag course and drainage basin, in “Picture Canyon” edition of *Plateau* magazine. 2014 – 2015. Museum of Northern Arizona. Vol. 8, Num. 1 & 2. All maps on foldout centerfold.

Colorado River Basin map, in preface of Martin, T. 2012. *Big water little boats – Moulty Fulmer and the first Grand Canyon dory on the last of the wild Colorado river*. Vishnu Temple Press, LLC. Flagstaff, Arizona, USA.

Food and Agriculture Organization of the United Nations (FAO). 2011. *Aquaculture production of aquatic animals for human consumption (tonnes) 2009*. Global Conference on Aquaculture 2010 – Farming the Waters for People and Food. Phuket, Thailand. Available at http://www.fao.org/fileadmin/templates/aquaculture_reviews/docs/Map_A8_high.pdf

PUBLICATIONS – ONLINE INTERACTIVE MAPS

Greater Grand Canyon Heritage Region Story Maps:

- Peoples of the Greater Grand Canyon Heritage Region
<http://springs.maps.arcgis.com/apps/MapSeries/?appid=799f72cc3d1e4ab195450358d265df17>
- Biota of the Greater Grand Canyon Heritage Region:
<http://springs.maps.arcgis.com/apps/MapSeries/?appid=3b48ab83d4be41c7890bc526a9f1df41>
- Mature and Old Growth Forest in the Greater Grand Canyon Heritage Region:
<http://springs.maps.arcgis.com/home/item.html?id=4514c22e01f0440ea68e939a465caf3d>
- Greater Grand Canyon Heritage Region
<http://springs.maps.arcgis.com/apps/Viewer/index.html?appid=851577e148d3446da8fddb02fc2afd78>

Desert Landscape Conservation Cooperative Story Maps:

- DLCC Species of Concern:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=15b696f26b2f446fb9295e699c79c84b>
- DLCC Species of Concern, Proportions:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=61bfda77e1045b69dc52a9b41680e6d>
- Temperature Change for 2046-2065:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=5da768bd36ab44c1a37189d36c69638d>
- Temperature Change for 2046-2065-IQR:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=77ce0dc0e7af40ffb59f38cae521751e>
- Precipitation Change for 2046-2065:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=83d65db07dab4e58a3ed589cf3087610>
- Precipitation Change for 2046-2065-IQR:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=e11ccc38c9c7496780943b4092606440>
- DLCC 1990 Population Density:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=f429714f241d4a539caf9faf439612d3>
- DLCC 2000 Population Density:

<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=f35461a09df64af0b06fbee33925d0c5>

- DLCC 2010 Population Density:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=454c47abd1b24222b4c688e628f4037c>
- DLCC Population Rate of Change: 1990 - 2010:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=da2e97cf194a43e8ad93aadb877c9ef2>

Southern Rockies Landscape Conservation Cooperative Story Maps:

- SRLCC Species of Concern:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=2b3a76bfa2034daab8a84317009b4b6a>
- SRLCC Species of Concern, Proportions:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=3c4c71eb509e4819bfa39b8a516b0535>
- Temperature Change for 2046-2065:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=294293c8a44b4cb98bd4258182c57052>
- Temperature Change for 2046-2065-IQR:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=149c92fceb8499092fb6f2f6af8b113>
- Precipitation Change for 2046-2065:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=b100b3111c994521840a6c7180b70bc9>
- Precipitation Change for 2046-2065-IQR:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=b002a2b78df54265a50917a240779632>
- SRLCC 1990 Population Density:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=bf06358739ea4b1f97c4839547573a8b>
- SRLCC 2000 Population Density:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=dbfff047c0084a389dea0463cece6a01>
- SRLCC 2010 Population Density:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=e2cc3775067e4141a413e0b1a479d31b>
- SRLCC Population Rate of Change: 1990 - 2010:
<http://springs.maps.arcgis.com/apps/webappviewer/index.html?id=57caa840c96f49138050ad6044096ddb>

UNIVERSITY COURSES TAUGHT

| | |
|---|---|
| GIS Component for Semester B of the Professional Forestry Program Northern Arizona University School of Forestry | Spring Semester; 2012 – Present |
| GIS Component for Semester C of the Professional Forestry Program Northern Arizona University School of Forestry | Fall Semester; 2012 – 2014 |
| GIS Component for Semester D of the Professional Forestry Program Northern Arizona University School of Forestry | Fall Semester; 2013 – 2015 |
| FOR 225: GIS Tools in Forestry Northern Arizona University School of Forestry | Spring Semester; 2018 – Present |
| FOR 425: Forest Management Apps in GIS Northern Arizona University School of Forestry | Winter Biennially; 2012; 2018 – Present |

FOR 525: GIS and Spatial Analysis
Northern Arizona University School of Forestry

Fall Semester; 2018 – Present

PRESENTATIONS

- Jenness, J.S.**, L. Stevens, A. Hazelton, J. Ledbetter, and E. Kaczmarowski. 2022. *Drones, Structure from Motion and the Digital Twin*. The Wildlife Society 2022 Annual Conference. November 10, 2022. Spokane, Washington, USA. Available at <https://youtu.be/DE81-A4M3nM>
- Jenness, J.S.**, A. Owens, and S. MacVean. 2022. *Bullfrogs of the Williams Ranger District*. Collaborative Conservation and Adaptive Strategy Toolbox (CCAST) Webinar Series. October 4, 2022. <https://www.youtube.com/watch?v=gnYK3K82E5w>
- Jenness, J.S.**, L. Stevens, A. Hazelton, J. Ledbetter, and E. Kaczmarowski. 2022. *Ecohydrogeology of Nevada Springs and Biota: Paleohydrology, Land use and Climate Change Impacts*. 2022 Joint Aquatic Sciences Meeting. May 14 – 20, 2022, Grand Rapids, MI. <https://jasm2022.aquaticsocieties.org/>
- Jenness, J.S.** 2021. *Geography of Nevada Springs and Spatial Patterns of Springs Discharge Rates and Water Quality Characteristics*. State of Knowledge Symposium on Nevada Springs and Wetland Ecology. <https://attendee.gotowebinar.com/recording/4039425818705043726>
- Jenness, J.S.**, L. Stevens, J. Ledbetter, A. Mendoza, A. Hazelton, and B. Mann. 2021. *Springs Online: A Long-Term Database of Springs and Spring-Dependent Species, and Its Application in the Springsnail Conservation Strategy*. FGSA Seminar Series, NAU School of Forestry. <https://nau.edu/forestry/fgsa-seminar-series/>
- Stevens, L. E., **J. Jenness**, and J. Ledbetter. 2021. *Distribution and Status of Colorado River Basin Springs and Springs-Dependent Species in Nevada*. Nevada Hydrological Society.
- Jenness, J.**, L. E. Stevens, J. D. Ledbetter, A. Mendoza, A. Hazelton, and B. Mann. 2020. *Springs Online and the Springs Geodatabase: A long-term database of springs and spring-dependent species*. EPA Region 9 Wetland Program Development Grant Virtual Conference. <<https://www.aswm.org/wetland-programs/6309-epa-region-9-virtual-conference>>. Accessed 18 Nov 2020.
- Jenness, J.S.**, L. Stevens, J. Ledbetter, A. Mendoza, A. Hazelton, and B. Mann. 2020. *Springs Online: A Long-Term Database of Springs and Spring-Dependent Species, and Its Application in the Springsnail Conservation Strategy*. The Wildlife Society 2020 Virtual Conference. September 29, 2020. Available at <https://youtu.be/I69tHE4WnAQ>
- Jenness, J.S.**, J. Ledbetter, L. E. Stevens, A. Hazelton, A. Mendoza and B. Mann. 2020. *The Springs Stewardship Institute Geodatabase*. Society for Conservation GIS (SCGIS) Virtual Conference Series. September 1, 2020. Available at https://youtu.be/OXp2h_mL-rg
- Annetts, T., R.M. Mitchell, A. Stears, D. Laughlin, H.E. Dowling, R.T. Strahan, J. Bakker, **J. Jenness** and M. Moore. 2020. *Direct effects of seasonal precipitation and temperature on the demography of two dominant bunchgrasses in Northern Arizona*. Ecological Society of America (ESA) 2020 Annual Meeting. August 3 – 6, 2020. <https://eco.confex.com/eco/2020/meetingapp.cgi/Paper/86836>
- Jenness, J.S.**, J. Ledbetter, L. E. Stevens, A. Hazelton, A. Mendoza and B. Mann. 2020. *The Springs Stewardship Institute Geodatabase*. 40th Annual Esri International User Conference. July 13 – 16, 2020. <https://uc2020.esri.com/>

- Jenness, J.S.** and L. E. Stevens. 2020. *Springs of the Colorado River Basin: An examination of spring types and water characteristics across elevation, and human population density over time.* Joint Annual Meeting (JAM) of the Arizona and New Mexico Chapters of The Wildlife Society and American Fisheries Society. January 30 – February 1, 2020. Prescott, AZ.
- Mann, B.L., L.E. Stevens, G. Alpert and **J. Jenness.** 2020. *Springs stewardship through the lens of the Springs Dependent Species Project: understanding the scope of springs ecosystems as vital endemic habitats and wildlife pathways.* Joint Annual Meeting (JAM) of the Arizona and New Mexico Chapters of The Wildlife Society and American Fisheries Society. January 30 – February 1, 2020. Prescott, AZ.
- Mendoza, A.L., L.E. Stevens and **J. Jenness.** 2020. *Managing springsnails of the Southwest: a multi-agency and multi-state springsnail conservation strategy.* Joint Annual Meeting (JAM) of the Arizona and New Mexico Chapters of The Wildlife Society and American Fisheries Society. January 30 – February 1, 2020. Prescott, AZ.
- Jenness, J.S.** and L.E. Stevens. 2018. *Springs and spring-dependent species of the Colorado river basin, Southwestern USA.* 2018 Springs Ecosystem Symposium. June 4 - 6, 2018. Flagstaff, Arizona, USA.
- Jenness, J.S.,** L. Yocum, P. Fulé, and A. Thode. 2017. *Previous fires and roads limit wildfire growth in Arizona and New Mexico.* 14th Biennial Conference of Science & Management on the Colorado Plateau & Southwest Region. September 11 – 14, 2017. Flagstaff, Arizona, USA.
- Wynne, J.J., **J. Jenness,** M.D. Jhabvala, T.N. Titus, D. Billings. 2015. *Detecting terrestrial caves by applying topographic analysis techniques to thermal imagery.* Abstract #9029, 2nd International Planetary Caves Conference, Flagstaff, AZ.
- Aguilar-Manjarrez, J., J. M. Kapetsky, and **J. Jenness.** 2014. *The what, where and how much of offshore mariculture: global development opportunities from a spatial perspective.* Keynote Presentation, Offshore Mariculture Conference. April 9 – 11, 2014, Naples, Italy.
- Zylo, M., C. Chambers, T. Grubb, and **J. Jenness.** 2013. *Bald eagles wintering in northern Arizona select perches based on food availability, visibility, and cover.* Annual Meeting, The Wildlife Society, Arizona and New Mexico Chapters, Albuquerque, NM, USA.
- Iniguez, J., **J. Jenness** and E. Margolis. 2012. *2011 fire season: an overview.* Southwest Fire Ecology Conference. February 27 – March 1, 2012, Santa Fe, New Mexico, USA.
- Ward, J., M. Bond, **J. Jenness,** and J. Ganey. 2012. *Burn trends in conserved habitat of spotted owls: are there environmental factors that indicate less vulnerability to high-severity burns?* Southwest Fire Ecology Conference. February 27 – March 1, 2012, Santa Fe, New Mexico, USA.
- Griffis-Kyle, K.L. and **J. Jenness.** 2011. *Landscape connectivity: Evaluation of four methods for estimating least-cost paths for desert anurans.* 96th Annual Ecological Society of America Meeting. Austin, TX.
- Jenness, J.,** D. Majka and P. Beier. 2009. *Making good compromises in implementing wildlife corridor designs.* 10th 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 16th 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

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

YOUTUBE GIS LESSONS

Special Topics on Springs and Spring Ecology

Choosing Springs to Survey:

<https://youtu.be/z5dGJyjXos>

Springs Online: A Long-Term Database of Springs and Spring-Dependent Species, and Its Application in the Springsnail Conservation Strategy

<https://youtu.be/I69tHE4WnAQ>

The Springs Stewardship Institute Geodatabase

https://youtu.be/OXp2h_mL-rg

An Introduction to ArcGIS Desktop (ArcMap, ArcCatalog, ArcScene and ArcGlobe)

An Introduction to ArcGIS

Introduction: Part I – The Joys of GIS

<https://youtu.be/XAEmxYX9cow>

Introduction: Part II – ArcGIS

https://youtu.be/Sdr9_2As_rI

Introduction: Part III – The ArcMap Interface

<https://youtu.be/zcnlF3gQUk8>

Spatial Data Types

Spatial Data Types: Part I – Workspaces and General Data Management

<https://youtu.be/3ciy0c4btIs>

Spatial Data Types: Part II – Vector Data

<https://youtu.be/27z9RgmmUwI>

Spatial Data Types: Part III – Raster Data

<https://youtu.be/2sEBOKXpFDM>

Spatial Data Types: Part IV – Beyond Vector and Raster Data

<https://youtu.be/OR96B-SFVWw>

Spatial Data Types: Part V – More new data types, Metadata and Data Management Strategies

<https://youtu.be/tbL28IKXMNo>

Selections, Joins and Relates

Selections, Joins and Relates: Part I – Why and How, plus Simple Statistics

<https://youtu.be/1QxNy3ChUQI>

Selections, Joins and Relates: Part II – Selection Methods, Joins and Relates

<https://youtu.be/D5WNuvVFni0>

Projections and Datums

Projections and Datums: Part I – Projected and Unprojected Coordinate Systems

<https://youtu.be/z7pPCVE2QM>

Projections and Datums: Part II – Examples and Reasons to Project

<https://youtu.be/64WZuBk4GVs>

Projections and Datums: Part III – Datums

https://youtu.be/nN_zHEZT4JQ

Projections and Datums: Part IV – Using Projections and Datums in ArcGIS

<https://youtu.be/WRYiJAYHKqQ>

Projections and Datums: Part V – Reprojecting Data into New Coordinate Systems

<https://youtu.be/oqvs26llbn0>

Creating and Editing Data

Creating and Editing Data in ArcMap

<https://youtu.be/md6046QoTIU>

Geoprocessing and Automation

Geoprocessing and Automation: Part I – Introduction to Geoprocessing

<https://youtu.be/jrQfx-5gv1c>

Geoprocessing and Automation: Part II – Geoprocessing Environment Settings

<https://youtu.be/ymsa-CjfwMw>

Geoprocessing and Automation: Part III – Models and ModelBuilder

<https://youtu.be/cn7a3xQRbuI>

Geoprocessing and Automation: Part IV – Introduction to Python

<https://youtu.be/SFL3aSrdpGY>

Cartography

Basic Cartography with ArcGIS Desktop:

<https://youtu.be/sQVxBqfs0qc>

Wildlife Analysis

Common Wildlife Analytical Functions:

<https://youtu.be/CB2NKLYRcAU>

Hydrology

Watersheds with ArcGIS Desktop:

<https://youtu.be/LabJcuTwBOg>

An Introduction to ArcGIS Pro:

Class Data: <https://drive.google.com/file/d/1ZNTvIxxL0xDfUldYHkYSejHEey0r3TrF/view?usp=sharing>

Class data compressed in 7-Zip format. See <https://www.7-zip.org/> if you do not have 7-Zip installed.

Introduction to GIS and ArcGIS

Video: Introduction to GIS: Part I –The Joy of GIS

Video: Introduction to GIS: Part II –The ArcGIS Suite of Software

Video: Introduction to GIS: Part III –The ArcGIS Pro Interface

Lab Exercises:

PowerPoint Slides:

Lab Exercise Videos:

Spatial Data Types

Video: Spatial Data Types: Part I – Workspaces and General Data Management

<https://youtu.be/uRCpAtXCco8>

Video: Spatial Data Types: Part II – Vector Data

<https://youtu.be/TOI-PVSQQ14>

Video: Spatial Data Types: Part III – Raster Data

<https://youtu.be/9V4fX3tFktw>

Video: Spatial Data Types: Part IV – Beyond Vector and Raster Data

https://youtu.be/OFZ_Buv4ntA

Video: Spatial Data Types: Part V – More new data types, Metadata and Data Management Strategies

<https://youtu.be/04VoUjzhiec>

Lecture Notes and Lab Exercises:

<https://docs.google.com/document/d/1EzbI0Fi3qlxnJtfZmBV9SIqwOMEECKJx/edit?usp=sharing&ouid=116021060774895792579&rtmpof=true&sd=true>

PowerPoint Slides: https://docs.google.com/presentation/d/1364iC3TnKBGge_JyIbCyfdFEIfiYh-9t/edit?usp=sharing&ouid=116021060774895792579&rtpof=true&sd=true

Lab Exercise Videos:

- Lab 1: Connecting to a data folder - <https://youtu.be/oKJWFpucXSA>
- Lab 2: Create a file geodatabase - <https://youtu.be/7zBnrJa43dI>
- Lab 3: Import a Feature Class - <https://youtu.be/d1CkwNJAULw>
- Lab 4: Import a Raster - <https://youtu.be/sktPVzynMTE>
- Lab 5: Investigate a Multiband Raster - <https://youtu.be/GZG4r57YXg0>
- Lab 6: Investigate a Layer File - https://youtu.be/_Py6cm_nd-M
- Lab 7: Investigate a TIN - <https://youtu.be/UFrL-qzU1ns>
- Lab 8: Investigate an Attribute Table - <https://youtu.be/YkxOn6Fr5wU>
- Lab 9: Zoom to features in Attribute table - <https://youtu.be/Rm8YJ20PHqE>
- Lab 10: Connect to Online Data Web Service - <https://youtu.be/M2ujeZ9UbGk>
- Lab 11: Connect to More Online Data Web Services - <https://youtu.be/ePBZ4gHM-58>
- Lab 12: View and Edit Metadata - <https://youtu.be/4IVuyEqtOeA>
- Lab 13: Share Spatial Data - <https://youtu.be/ckfjIKsKKM8>

List of GIS Servers: <https://drive.google.com/file/d/1A9cKmFrVaXycv5PL5Ys4XplSqqZBDJjf/view?usp=sharing>

Selections, Joins and Relates

Video: Selections, Joins and Relates: Part I – Why and How, plus Simple Statistics

<https://youtu.be/lMfMfrMcnGA>

Video: Selections, Joins and Relates: Part II – Selection Methods, Joins and Relates

<https://youtu.be/upK8ujL8svM>

Lab Exercises:

<https://docs.google.com/document/d/1f99NXLtaLX3ja0pEDfmvZwKl4l4sbjP2/edit?usp=sharing&ouid=116021060774895792579&rtpof=true&sd=true>

PowerPoint Slides:

<https://docs.google.com/presentation/d/1nzwP5ZhosJmolH9XgVXa672Gx03bZRAY/edit?usp=sharing&ouid=116021060774895792579&rtpof=true&sd=true>

Lab Exercise Videos:

- Lab 1: On-screen selection, Select by Attributes, and the Statistics tool - <https://youtu.be/EjqZcjRDlaI>
- Lab 2: Selecting by Location - <https://youtu.be/3YUfcc8fd9c>
- Lab 3: Practice with selecting by attributes and location - <https://youtu.be/-podMMrNx1c>
- Lab 4: Selecting by Location for Homework - <https://youtu.be/XZ2269Svrnk>
- Lab 5: Joining tables - https://youtu.be/_eOuoWgxYo
- Lab 6: Building and using Relates - <https://youtu.be/BXggx06QGzw>
- Lab 7: Exploring a complex web of related tables - <https://youtu.be/PuAb7knajzw>

Projections and Datums

Video: Projections and Datums: Part I – Projected and Unprojected Coordinate Systems

<https://youtu.be/4uw7IfMJvPY>

Video: Projections and Datums: Part II – Examples and Reasons to Project

<https://youtu.be/BDEwgALrL68>

Video: Projections and Datums: Part III – Datums

<https://youtu.be/Dt1-Q1jLX50>

Video: Projections and Datums: Part IV – Using Projections and Datums in ArcGIS

<https://youtu.be/wiHHpENhBYk>

Video: Projections and Datums: Part V – Reprojecting Data into New Coordinate Systems

<https://youtu.be/0YYJAE0tU-I>

Lecture Notes and Lab Exercises:

<https://docs.google.com/document/d/1G1KubZVAGgVLS4Z2QhID4RS57JOmGkwU/edit?usp=sharing&co-uid=116021060774895792579&rtpof=true&sd=true>

PowerPoint Slides:

https://docs.google.com/presentation/d/14s_9kFyca4dMgp2mpNT2A-W-R-qeWYCF/edit?usp=sharing&ouid=116021060774895792579&rtpof=true&sd=true

Lab Exercise Videos:

Lab 1: How ArcGIS Pro assigns coordinate systems to maps - <https://youtu.be/W-XRw8KtQIg>

Lab 2: Finding and using coordinate systems of data - <https://youtu.be/K0CeI2tj1GA>

Lab 3: Assigning a coordinate system to a dataset that is lacking one - https://youtu.be/XINjYb_iouk

Lab 4: Finding the geographic coordinate system - <https://youtu.be/mFYgfwOAzDY>

Lab 5: Projecting between different geographic coordinate systems - https://youtu.be/pV_pZgyod8M

Lab 6: Selecting by Distance using different coordinate systems - <https://youtu.be/TKylkKiBPMk>

Lab 7: Projecting Rasters - https://youtu.be/X0zcsKRI_Xg

Lab 8: Modifying predefined coordinate systems - <https://youtu.be/0ADauuOC-g0>

Creating and Editing Data

Video: Creating and Editing Data in ArcGIS Pro

<https://youtu.be/0IuEWTPBy2A>

Lecture Notes and Lab Exercises:

<https://docs.google.com/presentation/d/1zE3QhnnigS-rMmgAVFOpVvETfTUvExLI/edit?usp=sharing&ouid=116021060774895792579&rtpof=true&sd=true>

PowerPoint Slides:

<https://docs.google.com/presentation/d/1zE3QhnnigS-rMmgAVFOpVvETfTUvExLI/edit?usp=sharing&ouid=116021060774895792579&rtpof=true&sd=true>

Lab Exercise Videos:

Lab 1: Sketch and Create Features: Polylines - https://youtu.be/_NhlG5yLK_c

Lab 2: Sketch and Create Features: Polygons - <https://youtu.be/h926ZQgHfQ0>

Lab 3: Creating and Using Templates - <https://youtu.be/bDwWAM398sY>

Lab 4: Splitting and Cutting holes in Polygons, and the Trace tool - <https://youtu.be/F7th1UE4JBs>

Lab 5: Converting tabular data to points - <https://youtu.be/KNuT3s0Cp00>

Lab 6: Converting tabular data to polylines - <https://youtu.be/iz3Vbu907MY>

Lab 7: Georectifying images - <https://youtu.be/ask7JnXMIho>

Optional Image to Georeference for Lab:

<https://drive.google.com/file/d/1AwUL04LryTculijPhHi6aFWarOUA0QK4/view?usp=sharing>

Optional Image to Georeference for Lab:

<https://drive.google.com/file/d/1JeulwkImWsXS44I3tn79kbgldLLQUsyA/view?usp=sharing>

Geoprocessing and Automation

Video: Geoprocessing and Automation in ArcGIS Pro, Lecture 1: Basic Geoprocessing

https://youtu.be/zgS8Jzw_S6I

Video: Geoprocessing and Automation in ArcGIS Pro, Lecture 2: Environments

<https://youtu.be/9Carnt3NLEY>

Video: Geoprocessing and Automation in ArcGIS Pro, Lecture 3: ModelBuilder

https://youtu.be/H4JDVcPp_H8

Video: Geoprocessing and Automation in ArcGIS Pro, Lecture 4: Python

<https://youtu.be/-XrfcQVjWcM>

Lab Exercises:

<https://docs.google.com/document/d/11ExjZfpxcD3klzHsAdBv5AMU7mAbgKrx/edit?usp=sharing&ouid=116021060774895792579&rtpof=true&sd=true>

PowerPoint Slides:

<https://docs.google.com/presentation/d/197Z2Ty7ZOlalpsCyiqm0rWTF1CIkpaEB/edit?usp=sharing&ouid=116021060774895792579&rtpof=true&sd=true>

Lab Exercise Videos:

Lab 1: The Default Geodatabase - <https://youtu.be/caFr1hoWDHA>

Lab 2: The Merge Tool - https://youtu.be/e1aUr5fV_MA

Lab 3: The Dissolve Tool - https://youtu.be/txVsZOyQW_I

Lab 4: The Buffer Tool - <https://youtu.be/nqvKruhXJdU>

Lab 5: The Union Tool - <https://youtu.be/78IrZUAOoRc>

Lab 6: The Clip Tool - <https://youtu.be/Lp9KLIHdBUw>

Lab 7: ModelBuilder and Models - <https://youtu.be/feedZ8gLP8E>

Lab 8: Exporting and Modifying Python Code - <https://youtu.be/v1i4odPkv9U>

Lab 9: The Intersect and Summarize Tools - <https://youtu.be/2Cd37TTzbYs>

Sample Model:

<https://drive.google.com/file/d/1-mJHSqFaw0CrnPdaWYTHRZYjoGiD0X0y/view?usp=sharing>

Wildlife Analysis

Video: Common Wildlife Analytical Functions, Lecture 1: Environmental Envelopes and Minimum

Convex Polygons: <https://youtu.be/gil4U3SmVb8>

Video: Common Wildlife Analytical Functions, Lecture 2: Kernel Densities:

<https://youtu.be/qY7KVH4MT18>

Lab Exercise Videos:

Lab 0: Turning on Spatial Analyst: <https://youtu.be/JHMZYkbn7PI>

Lab 1: Environmental Envelopes - <https://youtu.be/DJoysFqcAZs>

Lab 2: Home Ranges and Minimum Convex Polygons - https://youtu.be/V_ixZS6ifO4

Lab 3: Kernel Densities - <https://youtu.be/JHJCsihgq9U>

GIS Data for Labs: https://drive.google.com/file/d/14EjFKmBLyIvO_x6w-SKHArvHeDYqRZlc/view?usp=sharing

Lab Exercises and Discussion: https://docs.google.com/document/d/11c5QW8MhAjdL_j0epruWqUxLoe3jd-qE/edit?usp=sharing&ouid=116021060774895792579&rtpof=true&sd=true

Watersheds and Basic Hydrologic Analysis in ArcGIS

Video: Basic Hydrologic Analysis in ArcGIS Pro Lecture: <https://youtu.be/9rWtpahmzdw>

Lab Exercise Videos:

Lab 1: Calculating Areas from Raster Datasets; <https://youtu.be/y0mXnZ3qR1Y>

- Lab 2: Problems when creating Watersheds without filling the DEM; <https://youtu.be/4zVEWRm3-gl>
- Lab 3: Filling Sinks in a DEM; <https://youtu.be/djy7TdgeMxQ>
- Lab 4: Calculating an Accurate Flow Direction Raster; <https://youtu.be/70T6qgfCnzo>
- Lab 5: Generating an Accurate Watershed; <https://youtu.be/1mOsOkoRWjI>
- Lab 6: Creating a Flow Accumulation Raster; <https://youtu.be/o2VkbSXx1dM>
- Lab 7: Generating a Stream Network using Strahler Stream Orders; <https://youtu.be/LPGMt3y5fQQ>
- Lab 8: Aspect Statistics within Watershed; <https://youtu.be/aRKegxte7Vk>
- Lab 9: Slope Statistics within Watershed; <https://youtu.be/niY0tu2Dang>
- Lab 10: The Topographic Wetness Index (TWI); <https://youtu.be/zSwv8watxdo>
- Lab 11: Finding the Shortest Path Through the Stream Network; <https://youtu.be/ldjv-hAFAMc>

GIS Data for Labs: https://drive.google.com/file/d/1i07mFxAo7Jl6EdphihMu-vD98Znqm3-DD/view?usp=share_link

Lab Exercises and Discussion:

https://docs.google.com/document/d/13FY0rPAsmvPjLb4wWwRjiAYr4o3cnCOa/edit?usp=share_link&touid=116021060774895792579&crpof=true&csd=true

Odds and Ends

Short Introduction:

<https://youtu.be/8u-epBlhOX4>

What you can do with a Forestry Degree: Be a Spatial Ecologist!:

<https://youtu.be/YHfLvJOksU>

A Few Weeks in the Life of *Zapus hudsonius luteus*, the New Mexico jumping mouse:

<https://youtu.be/CbSqueuzXcjc>

MAPS AND POSTERS PRESENTED

- Jenness, J.S.**, Margaret M. Moore, Daniel C. Laughlin, Robert T. Strahan, Jonathan D. Bakker, Helen E. Dowling, Judith D. Springer. 2021. *Cover and Density of Southwestern Ponderosa Pine Understory Plants in Permanent Chart Quadrats (2002 – 2020)*.
Available At: <https://jennessent.sharefile.com/d-sb564a1c803394af58b536242fcbd4021>
Shown At: The Wildlife Society's 28th Annual Conference. November 1 – 5, 2021.
- Jenness, J.S.**, J.G. Martínez-Fonseca, L. Stevens, A. Hazelton, J. Ledbetter, C. Chambers and E. Kaczmarowski. 2021. *On the Use of Drones to Enhance Spring Habitat Surveys*.
Available At: <https://jennessent.sharefile.com/d-s3f1a53315b7442fa8bc5b24122982b32>
Introduction At: <https://youtu.be/DJQMAAFwr7E>
Shown At: 1) The Wildlife Society's 28th Annual Conference. November 1 – 5, 2021.
2) 2022 Virtual JAM of the AZ TWS, NM TWS, and AZ/NM AFS. February 3 – 5, 2022
3) 2022 Joint Aquatic Sciences Meeting, Grand Rapids, MI. May 14 - 20, 2022
- Keeley, A.T.H., Beier, P. and **J. Jenness**. 2021. *Connectivity metrics for conservation planning and monitoring*.
Shown At: The Wildlife Society's 28th Annual Conference. November 1 – 5, 2021.
- Crookshanks, C., J. Sjöberg, E. Miskow, K. Szabo, K. Holcomb, K. Wheeler, **J.S. Jenness**, L. Stevens, C. Mellon, C. Mellison, M. Schwemm, L. Saito, R. Van Horne, M. Phillippi, J. Wullschleger. 2021. *Conservation Agreement and Strategy for Springsnails in Nevada and Utah*.
Shown At: 1) The Wildlife Society 2021 Virtual Conference. November 1 – 5, 2021
2) The American Malacological Society 2021 Virtual Conference. June 14 – 18, 2021
- Jenness, J.S.**, J.J. Wynne, D.L. Sonderegger, T.N. Titus and M.D. Jhabvala. 2020. *Detecting Caves with Thermal Imagery and Topographic Analysis Techniques*.
Available At: <https://jennessent.sharefile.com/d-s4af4bd041be49c7b>
Shown At: The Wildlife Society 2020 Virtual Conference. September 29, 2020
- Jenness, J.S.** 2020. *Heart of the Canyon*.
Shown At: 40th Annual Esri International User Conference Map Gallery. July 13 – 16, 2020. <https://www.esri.com/en-us/about/events/uc/esri-uc-map-gallery#/map-detail/5eed4f9df3b616cb345a0473>
1st Place Winner, Most Innovative Map
- Jenness, J.S.**, A. Mendoza, B. Mann, L. Stevens, J. Ledbetter and A. Hazelton. 2020. *Gimme Shelter! Springsnails in an Arid Land*.
Shown At: 40th Annual Esri International User Conference Map Gallery. July 13 – 16, 2020. <https://www.esri.com/en-us/about/events/uc/esri-uc-map-gallery#/map-detail/5eed4f9df3b616cb345a0486>
- Jenness, J.S.** and C. Chambers. 2020. *A few weeks in the Life of *Zapus hudsonius luteus*, the New Mexico Jumping Mouse*.
Shown At: 40th Annual Esri International User Conference Map Gallery. July 13 – 16, 2020. <https://www.esri.com/en-us/about/events/uc/esri-uc-map-gallery#/map-detail/5eed4f9df3b616cb345a047c>
- Jenness, J.S.** and K. Anderson. 2020. *Pre- and Post-Flood Wupatki Transects*.
Shown At: 40th Annual Esri International User Conference Map Gallery. July 13 – 16, 2020. <https://www.esri.com/en-us/about/events/uc/esri-uc-map-gallery#/map-detail/5eed4f9df3b616cb345a0572>
- Jenness, J.S.**, L. Stevens, A. Springer and J. Ledbetter. 2015. *Springs Ecosystems and Climate Change Risk*
Shown At: Desert Landscape Conservation Cooperative (DLCC) Climate-Smart Landscape Conservation Design Workshop. Tucson, Arizona, USA (August 4 – 6, 2015)
- Jenness, J.S.**, J. Ledbetter, L. Stevens and M. Joyce. 2015. *Springs of the Grand Canyon Region*
Shown At: 35th Annual ESRI International User Conference. San Diego, California, USA (2015)

Drake, J.C., **J.S. Jenness, J.** Goetting, and K.L. Griffis-Kyle. 2014. *Testing a model for the prediction of isolated water sites in the Sonoran desert.*

Shown At: 1) International Aridlands Conference. Lubbock, Texas August 13-18 (2018).

Jenness, J.S. 2010. *Calculating the shape of the landscape with geographically-projected data*

Shown At: 1) The Wildlife Society 17th Annual Conference. Snowbird, Utah, USA (2010)

Jenness, J.S., D. Majka, B. Brost and P. Beier. 2010. *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) 30th Annual ESRI International User Conference. San Diego, California, USA (2010)

1st Place Winner, Best Instructional Presentation

2) The Wildlife Society 17th Annual Conference. Snowbird, Utah, USA (2010)

Jenness, J.S. 2009. *Calculating areas and centroids on the sphere with raster and vector data*

Shown At: 1) The Wildlife Society 16th Annual Conference. Monterey, California, USA (2009)

Jenness, J.S. 2009. *Surface areas and ratios from DEMs.*

Shown At: 1) 29th Annual ESRI International User Conference. San Diego, California, USA (2009)

1st Place Winner, Best Instructional Presentation

Jenness, J.S. 2008. *Calculating areas and centroids on the sphere.*

Shown At: 1) Arizona/New Mexico Wildlife Society Meeting. Albuquerque, New Mexico, USA (2008)

2) 28th Annual ESRI International User Conference. San Diego, California, USA (2008)

1st Place Winner, Best Instructional Presentation

Jenness, J.S. 2007. *Grid tools for ArcView 3.x.*

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

Jenness, J.S. 2007. *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. 2007. *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. Strohmeier, S. Miller & D.P. Huebner. 2007. *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 14th Annual Conference. Tucson, Arizona, USA (2007)

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.*

Shown At: 1) 27th Annual ESRI International User Conference. San Diego, California, USA. (2007)

2) The Wildlife Society 14th Annual Conference. Tucson, Arizona, USA (2007)

3) Arizona/New Mexico Wildlife Society Meeting. Albuquerque, NM, USA (2008)

Jenness, J.S. 2005. *Mahalanobis distances.*

Shown At: 1) Arizona/New Mexico Wildlife Society Meeting. Gallup, New Mexico, USA (2005)

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

3) The Wildlife Society 14th Annual Conference. Tucson, AZ, USA (2007)

Jenness, J.S. 2005. *Calculating surface area from digital elevation models.*

Shown At: 1) Arizona/New Mexico Wildlife Society Meeting. Gallup, New Mexico, USA (2005)

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

Jenness, J.S., B. Dickson, and P. Beier. 2005. *Analyzing animal movement: an ArcView 3.x extension for assessing animal movement and use of habitats.*

Shown At: 1) 12th Annual Conference of the Wildlife Society. Madison, Wisconsin, USA (2005)

- 2) Arizona/New Mexico Wildlife Society Meeting. Flagstaff, Arizona, USA (2006)

Jenness, J.S. and J.J. Wynne. 2004. *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) 19th Annual Symposium. Las Vegas, Nevada, USA (March 30 - April 2, 2004)
 2) Arizona/New Mexico Wildlife Society Meeting. Gallup, New Mexico, USA (2005)
 3) 25th Annual ESRI International User Conference. San Diego, California, USA (2005)
 4) The Wildlife Society 14th Annual Conference. Tucson, AZ, USA (2007)

SOFTWARE PRESENTED

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

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

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

Jenness, J.S. 2008. *Tools for Graphics and Shapes.* 28th Annual ESRI International Users Conference - Application Fair, San Diego, California. **1st 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.* 27th Annual ESRI International Users Conference - Application Fair, San Diego, California.

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

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

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

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

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

Jenness, J.S. 2005. *Script and Dialog Tools.* 25th Annual ESRI International Users Conference - Application Fair, San Diego, California.

Jenness, J.S. 2004. *Mahalanobis distances.* 24th Annual ESRI International Users Conference - Application Fair, San Diego, California. **1st Place winner, Avenue Category**

Jenness, J.S., J. Dooley, J. Aguilar-Manjarrez and C. Riva. 2004. *The African water resource database.* 24th Annual ESRI International Users Conference - Application Fair, San Diego, California. **2nd Place winner, Avenue Category**

Jenness, J.S. 2004. *Calculating surface area from digital elevation models.* 24th Annual ESRI International Users Conference - Application Fair, San Diego, California.

Jenness, J.S. and J.J. Wynne. 2004. *Kappa Statistics*. 24th Annual ESRI International Users Conference - Application Fair, San Diego, California.

WORKSHOPS PRESENTED

Stevens, L., J. Ledbetter, A. Hazelton, **J.S. Jenness** and E. Kaczmarowski. *Springs Ecosystem Inventory, Assessment and Stewardship e-Workshop*.

Workshops Held At: 1) November 8 - 10, 2021: Presented Online to Nevada audience

Stevens, L., J. Ledbetter, A. Hazelton, **J.S. Jenness**, A. Mendoza and B. Mann. *Springs Ecosystem Inventory, Assessment and Stewardship e-Workshop*.

Workshops Held At: 1) May 27 – 29, 2020: Presented Online for BLM Safford District
2) June 1 – 3, 2020: Presented Online for general audience.

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 14th 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.

CITATION LIST

According to Google Scholar, my work has been cited over 4,100 times, with an h-index = 29 and an i10-index = 58.

- <https://scholar.google.com/citations?user=qaWDM-MAAAJ&hl=en>

ORCID: <http://orcid.org/0000-0002-9448-1444>

SCOPUS Author ID: 36860756600, <http://www.scopus.com/authid/detail.url?authorId=36860756600>

CERTIFICATIONS

CERTIFIED GIS PROFESSIONAL 2005
GIS Certification Institute, <http://www.gisci.org>, Certification #00050453

ARCGIS DESKTOP PROFESSIONAL 2010
 *Esri Technical Certification Program, Verification #4BFCBRC2CJVE50RM*

ARCGIS DESKTOP DEVELOPER ASSOCIATE 2011
 *Esri Technical Certification Program, Verification #ESLE44QKKNEEYLG M*

PARTNERSHIPS

Jenness Enterprises: Esri Partner Network, Silver Tier

NOVEMBER 2002 – 2020



Jenness Enterprises: Esri Partner Network, Bronze Tier

2020 – PRESENT



SERVICE TO PROFESSIONAL ORGANIZATIONS

| | |
|--|-----------------------------|
| American Society for Photogrammetry and Remote Sensing | 2000 – Present |
| American Ornithologists' Union | 1998 – Present |
| Association for Computing Machinery | 2014 – Present |
| Ecological Society of America | 2010 – Present |
| GIS Certification Institute | 2008 – 2010 |
| North American Cartographic Information Society | 2006 – Present |
| Society of American Foresters | 1989 – Present |
| Society for Conservation and GIS | 2006 – Present |
| The Wildlife Society | 1995 – Present |
| <i>Chair, Spatial Ecology and Telemetry Working Group</i> | 2008 – 2010, 2018 - Present |
| <i>Past-Chair, Spatial Ecology and Telemetry Working Group</i> | 2010 – 2018 |

JENNESS ENTERPRISES FEDERAL REGISTRATIONS

SAM: System for Award Management

- <https://www.sam.gov>
- DUNS: 010138993
- CAGE Code: 559A6

NSPIRES: NASA Solicitation and Proposal Integrated Review and Evaluation System

- <https://nspires.nasaprs.com/external/>
- DUNS: 010138993
- CAGE Code: 559A6

ADDITIONAL RELEVANT TRAINING

- ARCGIS PRO: ESSENTIAL WORKFLOWS: Esri Class. March 8 – 10, 2021.
- EXTENDING ARCGIS PRO WITH ADD-INS: Esri Class. April 15 – 17, 2020.
- ARCGIS ENTERPRISE – CONFIGURING A BASE DEPLOYMENT: Esri Class. August 15 – 16, 2019.
- DEVELOPING WEB APPS WITH ARCGIS API FOR JAVASCRIPT: Esri Class. April 18 – 20, 2018.
- INTRODUCTION TO WEB DEVELOPMENT USING ARCGIS API FOR JAVASCRIPT: Esri Class. March 28 – 30, 2018.

- SHARING CONTENT ON THE WEB: Esri Class. May, 2015. Online
- BUILDING GEODATABASES: Esri Class, April 2015. Online.
- INTRODUCTION TO R FOR FISHERIES SCIENTISTS: Workshop, Joint Annual AZ/NM American Fisheries Society & The Wildlife Society Meeting. February 2, 2012. Phoenix, AZ
- GIS PROGRAMMING 101 FOR ARCGIS 10 – PYTHON: GeoSpatial Training Services, December, 2010
- 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

- A VARIETY OF SOFTWARE PACKAGES, including:
 - GIS: ArcView 3.3, Spatial Analyst 2.0, 3D Analyst, ArcINFO 7, PC/ArcINFO 3.5, ArcGIS (9.x, 10.x) , ArcGIS Server, ArcGIS Online
 - SPSS 9.0 and S-Plus 7, 8, R-Studio
 - Microsoft Office Software
 - Adobe Creative Suite (Photoshop CS, Illustrator CS, Acrobat, InDesign CS)
 - Visual Basic 6, VBA programming languages
 - Visual Studio 2005 – 2019 programming languages
 - WordPerfect 10, Quattro Pro 8, Paradox 7, CorelDraw 6 and Corel PhotoPaint 6
 - ProCite 5, Zotero
 - Windows 95, 2000, XP, 7, 8, 10
 - Linux (Ubuntu [Unity], Korora [KDE], Mint [KDE])
- 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

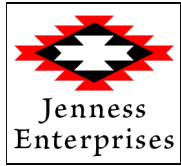
FOREST SERVICE AWARDS RECEIVED

| | |
|---|-----------------|
| Wings Across the Americas Conservation Award from the U.S. Forest Service International Program | 2018 |
| 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

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

EMPLOYMENT HISTORY

**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, using both focal-species based habitat suitability methods and land facet landscape morphology methods (see <http://www.corridordesign.org>).
- 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 and 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).

My business **Jenness Enterprises** is a Bronze Tier member of the Esri Partner Network.

ADJUNCT PROFESSOR AND GIS INSTRUCTOR

SEPTEMBER 2012 - PRESENT

*Northern Arizona University
School of Forestry
200 E. Pine Knoll Drive
Flagstaff, AZ 86011 USA*

Flagstaff, Arizona

SUPERVISOR: Dr. Jim Allen
(928) 523-5894

I teach courses in basic GIS concepts to Forestry students in the NAU Professional Forestry Program. These courses covers fundamental GIS topics such as projections and datums, characteristics of spatial data and basic spatial analysis and cartography, with special attention given to forestry-related labs and examples. The courses also give the students practical experience using Esri's ArcGIS Desktop software.

I teach a graduate-level class in GIS and Spatial Analysis covering more advanced topics including surface analysis, proximity and connectivity, and interpolation.

I teach a separate introductory GIS class (FOR 425: Forest Management Applications in GIS) for the NAU School of Forestry Undergraduate Fire Ecology Certificate program.

Awards: In 2013 and 2020, I was honored as the Teacher of the Year by the NAU School of Forestry Xi Sigma Pi Honor Society.

GIS ANALYST

DECEMBER 2014 - PRESENT

*Springs Stewardship Institute
Museum of Northern Arizona
3101 N Fort Valley Road
Flagstaff, AZ 86001 USA
<http://www.SpringStewardshipInstitute.org>*

Flagstaff, Arizona

SUPERVISOR: Jeri Ledbetter
(928) 774-5211, ext. 231 or (928) 699-4501

Dr. Larry Stevens
(928) 774-5211, ext. 231

I perform GIS analysis on issues related to springs, focusing mainly on potential threats to springs due to climate change, human population trends and general evolving conditions at spring locations. I also help maintain the online Springs Stewardship Institute (SSI) MySQL database, and I develop tools to interact between the MySQL RDBMS and the SSI ArcGIS Server geodatabase. I also generate online story maps and feature services illustrating springs-related issues, using ArcGIS Online and ArcGIS Server.

GIS DEVELOPER

JANUARY 2009 - SEPTEMBER 2011

*Public Safety Network
Boar's Head Corporation
9972 Creek Road
Oak View, CA 93022*

Flagstaff, Arizona

SUPERVISOR: Kurt Warner
(805) 895-2200

I developed a large suite of tools to aid our company in analyzing cell phone 911 call patterns with the purpose of improving the routing of calls to the appropriate emergency response agency. These tools also analyzed the distribution of cell towers to see if they were efficiently located and designed to handle current call patterns, and to do advanced jurisdictional analysis based on potentially overlapping polygons (representing police and sheriff jurisdictions) and buffer distances from highways (representing

California Highway Patrol jurisdictions). I also designed numerous tools to do various custom analyses and to produce graphic and spatial datasets that could be delivered online to our clients.

GS-9 WILDLIFE BIOLOGIST

*U. S. Forest Service
Rocky Mountain Experimental Station
2500 S. Pine Knoll Drive
Flagstaff, AZ 86011 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

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

1996-1998*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 Master's degree in May, 2000 and my thesis was published by NAU in June, 2000.

GS-7 SUPERVISORY BIOLOGICAL TECHNICIAN

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

1994 - 1996
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

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

1990 – 1994
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 served as a consultant with other scientists to help them utilize the technology. I 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

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

SUMMER 1988 & 1989

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

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

1986

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

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

1987 - 1999

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.

RELEVANT REFERENCES

Dr. Joseph Ganey, Research Wildlife Biologist.

US Forest Service, Rocky Mountain Research Station.

2500 S. Pine Knoll Drive

Flagstaff, AZ 86004

jganey@fs.fed.us

(928) 556-2156 or (928) 556-2001

Dr. José Aguilar-Manjarrez, Fishery Resources Officer.

Aquaculture Management and Conservation Service (FIMA)

Food and Agriculture Organization of the United Nations (FAO)

Viale delle Terme di Caracalla – 00100 Rome, Italy

Jose.AguilarManjarrez@fao.org Tel. (39) 06 57055452 Fax. (39) 06 57053020

Dr. Paul Beier, Regents Professor

Northern Arizona University, College of Ecosystem Sciences, School of Forestry

PO Box 15018

Flagstaff, AZ 86011-5018

Paul.Beier@nau.edu

(928) 523-9341 or (928) 523-3031

INTERESTS AND ACTIVITIES

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.

Signed:



Jeff Jenness