

# ALVIN LEROY MEDINA

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## PROFESSIONAL EXPERIENCE

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- **Rangeland Management Specialist**, current: Conducted studies on the interrelationships of riparian habitats on the Verde River, invasive plants relations on the upper Verde River and habitat associations of native fishes.
- **Research Ecologist**, 1991-2005: Conducted studies on the interrelationships of riparian habitats on the Verde River, livestock-elk-riparian interactions, and riparian-wetland restoration ecology on White Mountain Apache Tribal lands, wetland and riparian restoration practices in Guanajuato, Mexico, in conjunction with USDA Forest Service, International Program.
- **Range Scientist**, 1980-1990. Conducted studies on livestock-wildlife interactions and riparian habitat ecology.
- **Supervisory Range Conservationist**, 1978-1980, Wilderness Ranger District, Gila National Forest. Responsible for range, wildlife, fisheries, timber, minerals, recreation, and management of Gila Cliff Dwellings National Monument.
- **Natural Resources Consultant**, 1977-1978, Laramie, WY. Conducted range-wildlife studies and remote sensing surveys.
- **Research Range/soil Technician**, 1976-1978, Rocky Mountain Research Station, Laramie, WY. Conducted range and soil surveys of the Thunder Basin National Grasslands.
- **Natural Resource Specialist**, 1974-1975, Bureau of Land Management, Phoenix Resource Area, Phoenix, AZ.
- **Wildlife Conservation Officer**, 1972-73, Colorado Division of Wildlife, Denver, CO.

## RESEARCH EMPHASIS

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**1995 - Current:** Riparian vegetation relationships and evaluation of watershed and riparian hydrologic and geomorphic conditions, Upper Verde River, Prescott N.F.; Riparian-ungulate grazing relationships on the West Fork Allotment, Apache-Sitgreaves NF., Arizona. Medina, A.L.; Neary, D.G.; Rinne, J.N. RMRS-AWAE-Flagstaff.

**1990-1995:** Ecology of Arizona willow and riparian ecosystems; livestock-wildlife interactions on riparian ecosystems; assessment of riparian habitats and restoration ecology; development and testing of riparian monitoring protocol.

**1985-1990:** Effects of livestock grazing on riparian systems; nutrient cycling processes within riparian soils; effects on water quality; development processes of southwestern stream systems.

**1980-1985:** Livestock-wildlife interactions on semi-desert systems, with emphasis on quail and desert mule deer habitat utilization, dietary habits of cattle and scaled and gambel quail, vegetation classification of pinyon-juniper and riparian woodlands, and scientist-in-charge administration of Santa Rita Experimental Range.

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**1980-2006:** Technical liaison to USDA Forest Service, International Programs in Mexico; provided technical assistance in the design of wetland and riparian restoration, riparian monitoring protocols, and technical training in assessment methods for various projects (e.g. Salvenos al Rio Laja; Tapalpa Watershed Studies) in the Mexican States of Jalisco and Guanajuato.

## EDUCATION

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**Master of Science**, 1978, Wildlife science, New Mexico State University, minor in fishery science. \*\*\* Graduate coursework in fishery science (19 hours).

**Bachelor of Science**, 1973, Wildlife Science, New Mexico State University

Graduate studies (28 credit hours) in riparian ecology at Arizona State University, 1984-86.

Graduate studies (47 credit hours) in range management at the University of Wyoming, 1975-78.

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## HONORS AND AWARDS

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- January 2010-December 2010. President of Arizona Section of the Society for Range Management.
- October 2010. Southern Arizona Cattlemen's protective Association Award for "Excellence in Riparian and Wetland Ecology", in recognition of an outstanding contribution to the science of watershed management.
- September 2009. USDA Forest Service, Certificate of Merit for "Leadership and hard work in overseeing the Tamarisk Removal Project along the Upper Verde River – if not for you- this work would not have happened".
- October 2006. Gila County Cattlegrowers, awarded the "Buster Mounce Community Service Award in appreciation for your work with the cattle producers of Gila County on research and scientific data that supports livestock grazing".
- September 2006 USDA Forest Service, Certificate of Merit for outstanding leadership, technical support and selfless dedication to the Chino Ranger District's efforts to restore the ecological integrity of the Verde River through research, collaboration and adaptive management.
- July 2001 USDA Forest Service, Chief's Award 'Working Together for Rural America' for the Upper Verde River Adaptive Management Partnership. Recognition for outstanding accomplishments in creating a well-functioning, collaborative permittee-community research partnership to collectively address and apply science to difficult resource management issues along the Verde River, Arizona.
- June 2000. Golden Key National Honor Society, inducted as Honorary Member.
- August 1999. Certificate of Merit for personal dedication to field safety and development of a comprehensive project field work Job Hazard Analysis. On The Spot Award. Rocky Mountain Research Station.
- March 1998. USDA Forest Service, Certificate of Merit for Outstanding Leadership in the conduct of RM-4302's Research program.
- March 1998. USDA Forest Service, Certificate of Merit "in recognition of outstanding contribution of leadership, expertise and cooperation to the Chino Valley R.D., Prescott NF in developing watershed, soils, riparian habitat and fish knowledge on the Verde River in 1996-1997.

- March 1998. USDA Forest Service, Certificate of Merit awarded "for superior leadership and skills in providing technology transfer to the Prescott National Forest and the public in riparian habitat assessment methods and endangered species habitat management.
- January 1994. USDA Forest Service, Certificate of Merit awarded "for Outstanding Leadership in the conduct of RM-4302's Research program.
- January 1988. USDA Forest Service, Individual Achievement and Cash Award.
- February 1985. USDA Forest Service, Region 3 and RMFRES Certificate of Appreciation and Cash Award for outstanding program coordination in Saltillo and efficiency as an English-Spanish translator at the Arid Land Plants Symposium in Saltillo, Mexico.
- July 1981. USDA Forest Service, Individual Achievement and Cash Award, in recognition for preparing an Environmental Assessment Report on proposed changes in the status of the Santa Rita Experimental Range.
- 1977. Gamma Sigma Delta, Scholastic Honor Society.
- 1977. Sigma Xi, Science Honor Society, University of Wyoming.
- 1976. Alpha Zeta, Agricultural Honor Society, University Wyoming.

## **ACADEMIC SERVICE AND TEACHING EXPERIENCE**

Associate Staff, Northern Arizona University, 1992-present.

Associate staff, Arizona State University, 1980-1992.

### **Guest Lecturer**

- School of Forestry, Northern Arizona University: senior forestry seminar on riparian assessment and monitoring methods – mostly an annual event (1999-2007).
- School of Renewable Natural Resources, University of Arizona: practical aspects of range management (1985-86).
- Departamento de Hidrológica, Universidad Autónoma de Querétaro, Querétaro, México: Restoration of riparian and wetland habitats.
- DICTUS, Universidad de Sonora, Hermosillo, México: Ecology of riparian hábitats (1984-2000).

- 1984-86 Committee advisor for four Master's students from Mexico at ASU
- 2001-2006 Committee advisor to three Master's students at and mentor to 2 doctoral candidates at NAU.

**Field Naturalist**, Upper Verde River riparian and rangeland field tours for USDA Forest Service, International Programs. Guests from Israel, Jordan, Egypt, Mexico and various S. American countries. (1995-2008).

## **SOCIETY MEMBERSHIPS**

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- Society of Ecological Restoration, 1998-present
- Society for Range Management, LIFE Member
- American Water Resources Association, 2003-2009
- Society of Wetland Scientists, LIFE Member
- Honorary, Golden key International Honor Society, 2000-present
- Arizona Riparian Council. 1993-2000
- New Mexico Riparian Council, 1993-2009
- New Mexico Native Plant Society, 1996-present
- Arizona-Nevada Academy of Science, 1986-2000
- Quail Unlimited, 1989-1977
- Sigma Xi, 1977-1997
- Ecological Society of America, 1975- 1992
- The Wildlife Society, 1971-1985
- American Fisheries Society, 1973-1982
- American Society of Photogrammetry, 1975-1980.

## **INTERNATIONAL ASSIGNMENTS**

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- 2001-1006. USDA Forest Service, International Program Technical advisor to Salvemos al Rio Laja (NGO), San Miguel de Allende, Guanajuato, Mexico. Develop training program and develop river/wetland restoration strategies.
- 1993-1997. USDA Forest Service, International Program, Project

coordinator/technical advisor to Secretaria de Agricultura y Recursos Hidraulicos, INIFAP, Guadalajara, Mexico. Develop Best Management Practices and implement technical training program in watershed management for Mexican Scientists.

- April 1993. Technical editor/liaison between Rocky Mountain Research Station and Mexican technical coordinators from Secretaria de Agricultura y Recursos Hidraulicos, at International. Symposium, "Making Sustainability operational", 4TH Mexico/U.S. Symposium. Santa Fe, N.M.
- August-September 1992. Liaison/Consultant/Interpreter for USDA Forest Service, Region 3, Rocky Mountain Research Station and Mexican technical coordinators. from Secretaria de Agricultura y Recursos Hidraulicos.
- October 1987. Technical editor/liaison between USDA Forest Service Region 3, Rocky Mountain Research Station and Mexican technical coordinators from Secretaria de Agricultura y Recursos Hidraulicos, at the International. Symposium on "Strategies for classification and management of native vegetation for food production in arid zones." Tucson, Arizona.
- February 1985. Technical editor/coordinator./liaison. USDA delegation at International Symposium on "Management and Utilization of Arid Land Plants," Saltillo, Coahuila, Mexico.
- April 1981. Technical editor/coordinator for the International Workshop on Wildlife and Range Research Needs in Northern Mexico and Southwestern United States. Rio Rico, Arizona.

## **REGIONAL ASSIGNMENTS**

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Since 1985, participated in over 145 technical consultations with various resource management agencies, scientists, private entities and landowners, environmental groups, NGO's, technical committees, etc., including: Forest Service, Bureau of Land Management, Natural Resource Conservation Service (NRCS), New Mexico Dept. of Game and Fish, Arizona Dept of Fish and Game, U.S. Fish and Wildlife Service, The Nature Conservancy, Friends of the Prescott NF, White Mountain Apache Tribe, Hopi Nation, Santa Clara Tribe, Jemez Tribe, and other research entities and scientists from Mexico (INIFAP, SEMARNAP, Instituto de Ecología, Universidad de Hermosillo, Universidad de Michoachan, Universidad Automona de Querétaro). Principal issues included fishery-livestock interactions, riparian vegetation-hydrology dynamics, riparian-wetland and rangeland restoration

ecology and methods.

- Invited as technical expert to 2 workshops: March 2003. 'Streamside Vegetation - Hydrologic Interactions" Workshop to develop a scientifically sound approach for quantifying the stream flows necessary to sustain the functions and values of riparian vegetation. Subject matter experts from across the western U.S. participated. Sponsored by USDA Forest Service Stream Team, March 25-28, 2003 Tucson, Arizona. January 1995. 'Riparian Vegetation Workshop on developing state of the art knowledge base for defining management criteria for use of vegetation as a means of maintaining instream flows. Authorities from across the western U.S. were invited. Sponsored by USDA Forest Service Stream Team, Tucson, Arizona.

## SELECTED PEER-REVIEWED PUBLICATIONS

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100. Bleich, V.C.; Kie, J.G.; Loft, E.R.; Stephenson, T. R.; Oehler, M.W.; **Medina, A.L.** IN PRESS. Managing rangelands for wildlife. Pages xxx (Chapter 27) *In* Silvy, Nova, ed. Research and Management Techniques for Wildlife and Habitats. Seventh ed. The Wildlife Society, Bethesda, MD.
99. Neary, D.G.; **Medina, A.L.**; Rinne, J.N. (Editors). IN PRESS. The Upper Verde River: Ecology, Fish Biology, Hydrology, and Geomorphology. USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-XX: Fort Collins, CO.
98. Neary, D.G.; Rinne, J.N.; **Medina, A.L.** IN PRESS. Chapter 1: Introduction. IN: Neary, D.G.; Medina, A.L.; Rinne, J.N. (Editors). The Upper Verde River: Ecology, Fish Biology, Hydrology, and Geomorphology. USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-XX: Fort Collins, CO.
97. **Medina, A.L.**; Neary, Daniel G. IN PRESS. Chapter 2- A historical and pictorial perspective of the Upper Verde River. IN: Neary, D.G.; Medina, A.L.; Rinne, J.N. (Editors). The Upper Verde River: Ecology, Fish Biology, Hydrology, and Geomorphology. USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-XX: Fort Collins, CO.
96. Neary, D.G.; **Medina, A.L.** IN PRESS. Chapter 3: Hydrology. IN: Neary, D.G.; Medina, A.L.; Rinne, J.N. (Editors). IN PRESS. The Upper Verde River: Ecology, Fish Biology, Hydrology, and Geomorphology. USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-XX: Fort Collins, CO.
95. Long, J.W.; **Medina, A.L.**; Neary, D.G. IN PRESS. Chapter 5: Channel morphology of the Upper Verde River. IN: Neary, D.G.; Medina, A.L.; Rinne, J.N. (Editors). IN

PRESS. The Upper Verde River: Ecology, Fish Biology, Hydrology, and Geomorphology. USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-XX: Fort Collins, CO.

94. **Medina, A.L.** IN PRESS. Chapter 6- Woody vegetation of the upper Verde River. IN: Neary, D.G.; Medina, A.L.; Rinne, J.N. (Editors). IN PRESS. The Upper Verde River: Ecology, Fish Biology, Hydrology, and Geomorphology. USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-XX: Fort Collins, CO.
93. **Medina, A.L.**; Long, J.W. IN PRESS. Chapter 7- Spatial and temporal variation in streamside herbaceous vegetation of the upper Verde River. IN: Neary, D.G.; Medina, A.L.; Rinne, J.N. (Editors). IN PRESS. The Upper Verde River: Ecology, Fish Biology, Hydrology, and Geomorphology. USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-XX: Fort Collins, CO.
92. **Medina, A.L.** IN PRESS. Chapter 8- A preliminary view of water quality conditions of the upper Verde River. IN: Neary, D.G.; Medina, A.L.; Rinne, J.N. (Editors). IN PRESS. The Upper Verde River: Ecology, Fish Biology, Hydrology, and Geomorphology. USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-XX: Fort Collins, CO.
91. Neary, D.G.; Rinne, J.N.; **Medina, A.L.** IN PRESS. Chapter 10: Information sources. IN: Neary, D.G.; Medina, A.L.; Rinne, J.N. (Editors). IN PRESS. The Upper Verde River: Ecology, Fish Biology, Hydrology, and Geomorphology. USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-XX: Fort Collins, CO.
90. **Medina, A.L.**; Neary, D.G.; Rinne, J.N. IN PRESS. Chapter 11: Research recommendations. IN: Neary, D.G.; Medina, A.L.; Rinne, J.N. (Editors). IN PRESS. The Upper Verde River: Ecology, Fish Biology, Hydrology, and Geomorphology. USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-XX: Fort Collins, CO.
89. Neary, D.G.; Rinne, J.N.; **Medina, A.L.** IN PRESS. Chapter 12: Summary and conclusions. IN: Neary, D.G.; Medina, A.L.; Rinne, J.N. (Editors). IN PRESS. The Upper Verde River: Ecology, Fish Biology, Hydrology, and Geomorphology. USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-XX: Fort Collins, CO.
88. Johnson, T.D.; Kolb, T.E; **Medina, A.L.** 2009. Do riparian plant community characteristics differ between Tamarix (L.) invaded and non-invaded sites on the upper Verde River, Arizona? Biological Invasions. DOI 10.1007/s10530-009-9658-2.
87. Sprinkle, J.; Holder, M.; Erickson, C.; **Medina, A.**; Robinett, D.; Ruyle, G.; Maynard, J.; Tuttle, S.; Hays, J.Jr.; Meyer, W.; Stratton, S.; Rogstad, A.; Eldredge, K.; Harris, J.; Howery, L.; Sprinkle, W. 2008. Erratum. Rangelands 30(4):47-49.
86. Sprinkle, J.; Holder, M.; Erickson, C.; **Medina, A.**; Robinett, D.; Ruyle, G.; Maynard,

- J.; Tuttle, S.; Hays, J.Jr.; Meyer, W.; Stratton, S.; Rogstad, A.; Eldredge, K.; Harris, J.; Howery, L.; Sprinkle, W. 2007. Dutchwoman Butte revisited – examining paradigms for livestock grazing exclusion. *Rangelands* 29(6):21-34.
85. Long, J.W.; **Medina, A.L.** 2006. Geologic associations of Arizona willow in the White Mountains, Arizona. Pages 49-58. *In* Barlow-Irick, P., J. Anderson and C. McDonald, tech eds. 2007. Southwestern rare and endangered plants: Proceedings of the fourth conference; March 22-26, 2004; Las Cruces, New Mexico. Proceedings RMRS-P-48CD. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 135 p.
84. Long, J.W.; **Medina, A.L.** 2006. Consequences of ignoring geologic variation in evaluating grazing impacts. *Rangeland Ecology and Management* 59(4):373–382.
83. Long, J.W.; **Medina, A.L.**; Teclé, A. 2006. Geologic influences on Apache trout habitat in the White Mountains of Arizona. *Journal of the Arizona-Nevada Academy of Sciences* 38(2):88-101.
82. Sprinkle, J.; Holder, M.; Erickson, C.; **Medina, A.L.**; Robinett, D.; Ruyle, G.; Maynard, J.; Tuttle, S.; Hays, J. Jr.; Meyer, W.; Stratton, S.; Rogstad, A.; Eldredge, K.; Harris, J.; Howery, L.; Sprinkle, W. 2006. Dutchwoman Butte revisited - Examining paradigms for livestock grazing exclusion. *Proceedings Western Section American Society of Animal Science* 57:169-172.
81. **Medina, A.L.**; Lopez Mora, G.; Caldera Sosa, A.; Luna Suaste, B. 2005. Manual para la estabilización de rios y arroyos. Salvemos al Rio Laja, A.C., San Miguel de Allende, Guanajuato, Mexico in collaboration with USDA Forest Service, Rocky Mountain Research Station, Flagstaff, AZ. 59p.
80. Benavides-Solorio, J. de D.; Flores-Garnica J.G.; Baker, M.B. Jr.; **Medina, A.L.**; Talavera-Zuñiga, E. 2005. Producción de agua en la cuenca forestal El Carrizal, Tapalpa, Jalisco: Un analisis para los servicios ambientales. Pp. 93-112. *In* Juan de Dios Benavides-Solorio, Francisco Becerra Luna, Tomas Hernandez Tejeda, Cesareo Gonzalez Sanchez, and J. German Flores-Garnica (editors), *Contribución al estudio de los servicios ambientales*. Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias, Centro de Investigación Regional del Pacifico Centro, campo Experimental Centro-Altos de Jalisco. Libro Tecnico Numero 1. 245p.
79. **Medina, A.L.**; Rinne, J.N.; Roni, P. 2005. Riparian restoration through grazing management: considerations for monitoring project effectiveness. Pages 97-126 *in* P. Roni, editor. *Monitoring stream and watershed restoration*. American Fisheries Society, Bethesda, MD. 350pp.
78. Bleich, V.C.; Kie, J.G.; Stephenson, T.R.; Oehler, M.W.; **Medina, A.L.** 2005. Managing rangelands for wildlife. Pp 873-897 *in* C. E. Braun, editor, *Research and management techniques for wildlife and habitats*. 6th ed. The Wildlife Society, Bethesda, Md.
77. Long, J.W.; **Medina, A.L.** 2005. Geologic associations of Arizona Willow in the White

Mountains, Arizona. In Proceedings of the Fourth Southwestern Rare Plants Conference, Las Cruces.

76. **Medina, A.L.**; Long, J.W. 2004. Placing riffle formations to restore stream functions in a wet meadow. *Ecological Restoration* 22:120-125.
75. Benavides-Solorio, J. de D.; Flores-Garnica J.G.; Baker, M.B. Jr.; **Medina, A.L.**; Talavera-Zuñiga, E. 2004. Origen del escurrimiento y su calidad en la cuenca de montaña el carrizal, Tapalpa, Jalisco, México. III Congreso Latinoamericano de Manejo de Cuencas Hidrográficas. June 9-13, 2003. Arequipa, Perú. Organized by Red Latinoamericana de Manejo de Cuencas Hidrográficas (REDLACH), Instituto Nacional de Recursos Naturales de Perú (INRENA) and Oficina Regional de la FAO para América Latina y el Caribe.
74. Long, J.; **Medina, A.L.** 2004. Comparing the hydrological variability of rivers in the greater Gila Basin. *Hydrology and Water Resources in the Southwest: Proceedings of the Arizona-Nevada Academy of Science Hydrology Section.*
73. Long, J.W.; **Medina, A.L.**; Steed, J.E. 2004. Restoration of riparian ecosystems. Pages 333-358 in Malchus B. Baker, Jr., P. F. Ffolliott, L.F. DeBano, and D. G. Neary, eds. *Riparian areas of the Southwestern United States: Hydrology, ecology, and management.* Lewis Publishers, New York.
72. **Medina, A.L.** 2003. Gambel and scaled quail diets on the Santa Rita Experimental Range. PP. 133-140. In McClaran, Mitchell, P.; Ffolliott, Peter F.; Edminster, Carleton, B., tech coords. *Santa Rita Experimental Range: 100 years (1903-2003) of accomplishments and contributions; conference proceedings; 2003 October 30 November 1; Tucson, AZ. Proc. RMRS-P-30.* Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 197 p.
71. **Medina, A.L.** 2003. Historical and recent flora of the Santa Rita Experimental Range. PP 141-148. In McClaran, Mitchell, P.; Ffolliott, Peter F.; Edminster, Carleton, B., tech coords. *Santa Rita Experimental Range: 100 years (1903-2003) of accomplishments and contributions; conference proceedings; 2003 October 30 November 1; Tucson, AZ. Proc. RMRS-P-30.* Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 197 p.
70. Castro, H.Z.; Gómez-Tagle, A.F.; Chávez Huerta, Y.; **Medina, A.L.** 2002. Metodología rápida para la evaluación de ecosistemas riparios en zonas templadas. *Ingeniería Hidráulica en México XVII* (1):67-74.
69. **Medina, A.L.**; Royalty, R.K. 2002. A 12-year, post-wildfire geomorphic evaluation of Ellison Creek, Central Arizona. *Proc. Hydrology Section Arizona-Nevada Academy of Sciences.* 32:77-86.
68. Neary, D.G.; **Medina, A.L.**; Baker, M.B. Jr. 2001. Geomorphic Conditions of the Riparian Zone, Upper Verde River. Pages 45-52 Pp. 45-52. In: DeCarlo, C.; Schlinger, C.; Springer, A. (comps.) *Verde River Watershed Symposium – State of the Watershed*

in 2001. Northern Arizona University, Flagstaff, AZ.

67. **Medina, A.L.** 2001. A preliminary view of water quality conditions of the upper Verde River. Pages 25-33 in C. Decarlo, C. Schlinger, and A. Springer, editors. Verde Watershed Symposium: State of the Watershed in 2001. Cliff Castle Lodge and Conference Center, Camp Verde, AZ. May 17-19, 2001. Northern Arizona University, Flagstaff, AZ.
66. **Medina, A.L.** 2001. A preliminary analysis of riparian habitat conditions of the upper Verde River. Pages 25-33 in C. Decarlo, C. Schlinger, and A. Springer, editors. Verde Watershed Symposium: State of the Watershed in 2001. Cliff Castle Lodge and Conference Center, Camp Verde, AZ. May 17-19, 2001. Northern Arizona University, Flagstaff, AZ.
65. **Medina, A.L.;** Rinne, J.N. 2000. Ungulate/fishery interactions in southwestern riparian ecosystems: pretensions and realities. Pages in Transactions of the 64<sup>th</sup> North American Wildlife and Natural Resources Conference.
64. Neary, D.G.; Rinne J.N.; **Medina, A.L.;** Baker, M.B. Jr.; Michael, J.L. 2000. Watershed management for endangered aquatic and riparian species: Facts and fallacies. World Water Conference, March 13-16, 2000. Melbourne, Australia.
63. **Medina, A.L.** 1999. Nonnative ungulates and native plant interactions in the southwest. Pp 28-38. In: Native Plant Society of New Mexico, 1999 symposium proceedings; Aug. 26-29; Albuquerque, NM.
62. Snider, G.B.; Daugherty, P.J.; **Medina, A.L.** 1998. An ecological economic approach for analyzing the costs and benefits of riparian restoration projects. Hydrology and Water Resources in Arizona and the Southwest. 27:47-50.
61. **Medina, A.L.;** D. Benavides Solorio, J.D.; Talavera Zuniga, E. 1998. Problemas de disturbio de la calidad de agua en la cuenca forestal El Carrizal, Tapalpa, Jalisco. In III Congreso Mexicano Sobre Recursos Forestales, November 1997, Facultad de Ciencias Forestales, UANL, Linares, Nuevo Leon, Mexico. P101.
60. Baker, M.B., Jr.; **Medina, A.L.** 1997. Fisheries and stream restoration in the Southwest: a critical review. Journal American Water Resources Association 33(4):407-415.
59. **Medina, A.L.;** Fletcher, R. 1997. The legacy of Santa Rita. Forestry Research West March. Pp4-6.
58. **Medina, A.L.;** Baker, M.B. Jr.; Turner, J.R. 1997. Channel types and geomorphology of the upper Verde River. Journal American Water Resources Association 33(4):465-473.
57. Rinne, J.N.; **Medina, A.L.** 1996. Implications of multiple use management strategies on native Southwestern (USA) fishes. Pp 111-124. In R.M. Meyer, C. Zhang M. L. Windsor, B. J. McCay, L. J. Hushak, and R. M. Muth. (eds.). Fisheries resource utilization and policy. Proc. World Fisheries Congress, Theme 2. Oxford & IBH

Publishing Co. Pvt. Ltd., New Delhi.

56. **Medina, A.L.** 1996. The Santa Rita Experimental Range: History and annotated bibliography (1903-1988). USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, RM-GTR-276. 67p.
55. **Medina, A.L.;** Baker, M.B. Jr. 1996. Nutrient characteristics of trapped sediments resulting from prescribed fire. Proc. 6th Fed. Interagency Sedimentation Conf. 2:104-111.
54. Cavazos, J. R.; **Medina, A.L.** 1996. Multiple Uses of Rangelands in Northern Mexico. Pages 46-51. In Proc of the Fifth International Rangeland Congress Vol. 2: Society for Range Management. Denver, Co.
53. DeBano, L.; Rinne, R.N.; **Medina, A.L.** 1996. Understanding and managing southwestern riparian-stream ecosystems: National Forest systems and Forest Service research partnerships. In, Proc. of the National Hydrology Workshop, Phoenix, Arizona, April 27-May 1, 1992, (Dan Neary, Kim C. Ross and Sandra S. Coleman, Eds.). USDA Forest Service, GTR-RM-279. p96-102.
52. **Medina, A.L.;** Rinne, J.N.; Neary, D.G.; Rising, M. 1996. Adaptive management and the threatened Apache trout. Science and Management Collaboration, Success stories, No. 8. 2p.
51. **Medina, A.L.** 1996. Native aquatic plants and ecological condition of southwestern wetlands and riparian areas. Pp 329-335. In: D. W. Shaw and D. Finch, tech. coords. Desired Future Conditions for Southwestern Riparian Ecosystems: bringing interest and concerns together; 1995 September 18-22; Albuquerque, NM/US Gen. Tech. Rep. RM-272. Fort Collins, CO/USA: USDA, Forest Service, Rocky Mountain Forest and Range Experiment Station.
50. **Medina, A.L.;** Baker, M.B. Jr.; Neary, D.G. 1996. Desirable functional processes: A conceptual approach for evaluating ecological condition. Pp 302-311. In: D. W. Shaw and D. Finch, tech. coords. Desired Future Conditions for Southwestern Riparian Ecosystems: bringing interest and concerns together; 1995 September 18-22; Albuquerque, NM/USA. Gen. Tech. Rep. RM-272. Fort Collins, CO/USA: USDA, Forest Service, Rocky Mountain Forest and Range Experiment Station.
49. Neary, D.G.; **Medina, A.L.** 1996. Geomorphic response of a montane riparian habitat to interactions of ungulates, vegetation, and hydrology. Pp 143-147. In: D. W. Shaw and D. Finch, tech. coords. Desired Future Conditions for Southwestern Riparian Ecosystems: bringing interest and concerns together; 1995 September 18-22; Albuquerque, NM/USA. Gen. Tech. Rep. RM-272. Fort Collins, CO/USA: USDA, Forest Service, Rocky Mountain Forest and Range Experiment Station.
48. **Medina, A.L.;** Gomez-Tagle,; Baker, M.B. Jr.; Neary, D.G. 1995. Propuesta de ecosistema para el diagnostico de condiciones y manejo de ecosistemas ribereñas en la cuenca del Carrizal, Tapalpa, Jalisco, Mexico. Pp. 83-85. In: Aguirre-Bravo, C.; Eskew, L.; Villa-Salas, A.B.; Gonzalez-Vicente, C.E. (eds.), Partnerships for

Sustainable Forest Ecosystem Management; Proceedings of the 5th Mexico/USA Biennial Symposium, 17-20 October 1994, Guadalajara, Jalisco, Mexico, USDA Forest Service General Technical Report RM-266.

47. **Medina, A.L.**; Gomez-Tagle, A.; Baker, M.B., Jr.; Neary, D.G. 1995. Ecosystem approach for diagnosis of conditions and management of riparian ecosystems in El Carrizal watershed, Tapalpa, Jalisco, Mexico. Pp. 83-85. In: Aguirre-Bravo, C.; Eskew, L.; Villa-Salas, A.B.; Gonzalez-Vicente, C.E. (eds.), Partnerships for Sustainable Forest Ecosystem Management; Proceedings of the 5th Mexico/USA Biennial Symposium, 17-20 October 1994, Guadalajara, Jalisco, Mexico, USDA Forest Service General Technical Report RM-266.
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21. Sepulveda, J.I.; **Medina, A.L.** 1993. Manejo de poblaciones de *yucca schidigera* como un recurso sostenible. USDA Forest Service general technical Report RM-240. Pages 164-171.
20. Solis-Garza, G.; Brady, W.; **Medina, A.L.** 1993. Riparian plant communities on the Rio Los Ajos, Sonora, Mexico. *Ecologica* 3(1):13-22.
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16. **Medina, A.L.** 1988. Stream channel and vegetation changes in sections of McKnight Creek, New Mexico. *Great Basin Naturalist* 48(3):373-381.
15. **Medina, A.L.** 1988. Diets of scaled quail in southern Arizona. *Journal of Wildlife Management* 52:753-757.
14. Rinne, J.N.; **Medina, A.L.** 1988. Factors influencing salmonid populations in six headwater streams, central Arizona, USA. *Polish Archives Hydrobiology*. 35(3-4):515-532.
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7. **Medina, A.L.** 1984. A profile meter for obtaining surface relief and substrate measurements in streams. Rocky Mountain Forest and Range Experiment Station, Research Note RM-437. 5p.
6. Severson, K.E.; **Medina, A.L.** 1983. Deer and elk habitat management in the Southwest. *Journal of Range Management Monograph No. 2*. 64p.
5. Severson, K.E.; **Medina, A.L.** 1983. The Santa Rita Experimental Range. Pp. 56-59. In David R. Patton, Peter Ffolliott, Sonia Gallina, and Jose de la Puente, editors, *Symposium Proceedings: Wildlife and Range Research Needs in Northern Mexico and Southwestern United States*. General Technical Report WO-36. Rio Rico, AZ. April

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4. **Medina, A.L.** 1983. Range research and resource management in southern Arizona. Pp. 104-108. In David R. Patton, Jose de la Puente, Peter F. Ffolliott, Sonia Gallina, and E.T. Bartlett (eds.), Symposium Proceedings: Wildlife and Range Research Needs in Northern Mexico and Southwestern United States. General Technical Report WO-36. Rio Rico, AZ. April 20-24, 1981.
3. **Medina, A.L.** 1983. La investigacion en el campo y el manejo de recursos en el sur de Arizona. Pp. 116-120. In David R. Patton, Jose de la Puente, Peter F. Ffolliott, Sonia Gallina, and E.T. Bartlett,(eds.), Reunion sobre "La fauna y su medio ambiente" Noroeste de Mexico-Suroeste Estados Unidos de America. USDA Forest Service, General Technical Report WO-36S.
2. **Medina, A.L.** 1978. Vegetation of Sheridan County, Wyoming, (Map, scale 1:250,000). In Sheridan County, Wyoming-Geologic Map Atlas and Summary of Land, Water, and Mineral Resources. Geological Survey of Wyoming and University of Wyo. Dept. of Geology, County Resource Series No. 5.
1. **Medina, A.L.** 1976. Vegetation of Johnson County, Wyoming (Map, scale 1:250,000). In Johnson County, Wyoming-Geologic Map Atlas and Summary of Land, Water, and Mineral Resources. Geological Survey of Wyoming and University of Wyo. Dept. of Geology, County Resource Series No. 4.

## **PROFESSIONAL SKILLS AND TRAINING**

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- Wetland Delineation, January 2004.
- Hydric Soils Indicators, May 2004.
- Creation and Restoration of Wetlands, June 2005.
- Designed grassland-woodland rangeland restoration projects on the Cibique watershed of the White Mountain Apache Tribe, 1997-Present.
- Designed riparian restoration project on Russell Spring for University of Arizona-V Ranch, Camp Verde, AZ. 2009-Present.
- Designed and implemented montane wetland restoration projects (Pacheta Creek, Soldier Springs, Lofer Cienega, Horseshoe Cienega, Pacheta Cienega, Cibique River, White Springs) on White Mountain Apache Tribe, 1997-2002.
- Designed multiple riparian-wetland restoration projects in conjunction with USDA Forest Service, International Program, project on Salvemos al Rio Laja (NGO) in Guanajuato, Mexico, 2001-2006.
- Designed multi-parameter watershed monitoring program and trained

scientists for the Tapalpa Watershed in Tapalpa, Jalisco, Mexico under the direction of Secretaria de Agricultura y Recursos Hidraulicos, INIFAP, Guadalajara, Mexico. 1993-2000.

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## SELECTED PRESENTATIONS (MOST RECENT – 13 OUT OF 53)

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1. Johnson, Tyler D., Kolb, Thomas E., **Medina, Alvin L.** 2009. Do riparian plant community characteristics differ between tamarisk (*Tamarix L.*) invaded and non-invaded sites on the upper Verde River, Arizona? Oral presentation at the 2009 Tamarisk and Russian Olive Research Conference, February 18 & 19, 2009, Grand Sierra Resort, Reno, Nevada.
2. Johnson, Tyler D., Kolb, Thomas E., Medina, Alvin L. 2007. Does riparian vegetation influence Tamarix presence? Poster presentation at the 2007 Tamarisk Symposium at the Two Rivers Convention Center in Grand Junction, Colorado, October 24-25, 2007.
3. Johnson, Tyler D., Kolb, Tom E., **Medina, Alvin L.** 2007. Does riparian vegetation influence tamarisk establishment? Poster presentation #17 at the Ninth Biennial Conference of Research on the Colorado Plateau. Du Bois Center, Northern Arizona University, October 29-November 1, 2007.
4. Long, Jonathan W. and **Alvin L. Medina.** 2006. Benefits Of Land Use For Sustaining Native Diversity. Oral presentation at the 33rd Annual Natural Areas Conference, “Stewards of the Old and New West”, Flagstaff, AZ. September 20-23, 2006.
5. **Medina, Alvin L.**, Tyler D. Johnson and Jackson Leonard. 2006. Influence of Saltcedar and Associated Woody Vegetation on Channel Geomorphology of the Upper Verde River. 2006 Tamarisk Research Conference, Current Status and Future Directions. Oct 3-4, Ft Collins, CO.
6. **Medina, Alvin L.**, Tyler D. Johnson. 2006. Exotic And Invasive Plants Of The Upper Verde River. Presentation @ the Arizona-Nevada Academy Of Sciences, April 8, 2006. Tucson, AZ.
7. **Medina, Alvin L.** 2006. Geomorphology And Long Term Changes In The Upper Verde River. Presented @ AFS Annual Meeting Feb 3, 2006 Flagstaff, AZ.
8. Jackson Leonard, **Alvin L. Medina** and Daniel G. Neary. 2006. Geologic Influence on Woody Vegetation Response 15 years after the Dude Wildfire. Third Fire Ecology and Management Conference, Nov. 13-17.

San Diego, CA.

9. Jackson Leonard, **Alvin L. Medina**, Daniel Neary, Aregai Teclé, Jonathan Long. 2006. Woody vegetation changes 15 years after the Dude Fire. Presentation @ the Arizona-Nevada Academy Of Sciences, April 8, 2006. Tucson, AZ.
10. Gilberto Solis-Garza, Joaquin Murrieta-Saldivar, Rigoberto López-Estudillo, Philip Jenkins, **Alvin Leroy Medina**, Gerardina Nubes-Ortiz, Arturo I. Villalba-Atondo, Socorro Herrera-Carbajal, y Alfonso González-Siqueiros. 2006. Comunidad y Ciencia, Trabajando para la Restauración del Río Santa Cruz, Sonora. Oral presentation at the 6th Conference on Research and Resource Management in the Southwestern Deserts, "Borders, boundaries and Time Scales". Tucson, AZ. May 2-5, 2006.
11. Leonard, Jackson M., **Alvin L. Medina**, and Jonathan W. Long. 2006. Geology Mediates Long-Term Response To The Dude Fire. Poster presentation at the 8th Biennial Conference of Research on the Colorado Plateau, "Integrating Science and Management on the Colorado Plateau", Northern Arizona University, Flagstaff, AZ. November 7-10, 2005.
12. Long, Jonathan W., B. Mae Burnette, **Alvin L. Medina**, and Joshua L. Parker. 2004. Restoration of soldier Spring: an isolated habitat for native Apache trout. In 16<sup>th</sup> International Conference, Society for ecological Restoration, August 24-26, Victoria, Canada.
13. Long, Jonathan W., B. Mae Burnette, and **Alvin L. Medina**. 2004. Restoring wetlands after the Rodeo-Chediski wildfire. In 16<sup>th</sup> International Conference, Society for ecological Restoration, August 24-26, Victoria, Canada.