

**ROSSANA SALLENAVE**  
Extension Aquatic Ecology Specialist/College Professor  
Department of Extension Animal Sciences and Natural Resources  
New Mexico State University  
(575) 646-6093; email: rsallena@nmsu.edu

## **EDUCATION**

**Ph.D.** 1994. Environmental Biology, University of Guelph, Ontario, Canada

**M.Sc.** 1986. Biology, University of Waterloo, Ontario, Canada

**B.Sc.** 1983. Environmental Biology, McGill University, Quebec, Canada

## **PROFESSIONAL EXPERIENCE**

2018-present    Extension Aquatic Ecology Specialist, College Professor, Department of Extension Animal Sciences and Natural Resources, New Mexico State University

2013-2018      Extension Aquatic Ecology Specialist, Associate College Professor, Department of Extension Animal Sciences and Natural Resources, New Mexico State University

2008-2013      Extension Aquatic Ecology Specialist, Assistant College Professor, Department of Extension Animal Sciences and Natural Resources, New Mexico State University

2002-2008      Research Specialist, Department of Fish, Wildlife and Conservation Ecology, New Mexico State University

2000-2002      College Assistant Professor, Department of Chemistry and Biochemistry, New Mexico State University

1997-2000      Post-Doctoral Research Associate, Michigan State University

1994-1997      Post-Doctoral Fellow, University of Hohenheim, Germany

## **AWARDS**

- Epsilon Sigma Phi, Early Career Award, NM Chapter of Epsilon Sigma Phi (2016)
- Distinguished Extension Award, New Mexico State University, CAHE (2015)
- New Specialist Award, New Mexico Specialists' Association (2013)
- Outstanding Integrated Program Water Resources Team Award, Rio Grande Basin Initiative, USDA-CSREES (2007)

## **PUBLICATIONS**

### *Refereed Journal Articles:*

Serena, M., Schiavon, M., **Salleneve, R.**, Leinauer, B. (2019). Drought avoidance of warm-season turfgrasses affected by irrigation system, surfactant and Trinexapac-Ethyl. Crop Science doi:10.2135/cropsci2019.03.0203.

Serena, M., Sportelli, M., Sevostianova, E. B., **Salleneve, R.**, Leinauer, B. (2018). Combining trinexapac-ethyl with a soil surfactant reduces bermudagrass irrigation requirements. Agronomy Journal, 110(6), 2180-2188.

- Pornaro, C., Macolino, S., De Luca, A., **Sallenave, R.**, Leinauer, B. (2018). Plant species diversity of naturalized roughs as affected by conversion strategies. *Agronomy Journal*, 110, 1709-1717.
- Serena, M., Schiavon, M., **Sallenave, R.**, Leinauer, B. (2017). Nitrogen fertilization of warm-season turfgrasses irrigated with saline water from varying irrigation systems. 2. carbohydrate and protein content. *Journal of Agronomy and Crop Science*, 1–9., DOI: 10.1111/jac.12256.
- Serena, M., Schiavon, M., **Sallenave, R.**, Leinauer, B. (2017). Nitrogen fertilization of warm-season turfgrasses irrigated with saline water from varying irrigation systems. 1. Quality, spring green-up and fall color retention. *Journal of Agronomy and Crop Science*, 1–13., DOI: 10.1111/jac.12254.
- Ganjegunte, G., Clark, J. A., **Sallenave, R.**, Sevostianova, E., Serena, M., Leinauer, B., Alvarez, G. (2017). Soil salinity of an urban park after long-term irrigation with saline ground water. *Agronomy Journal*, 109(6), 3011-3018.
- Alvarez, G., Sevostianova, E., Serena, M., **Sallenave, R.**, Leinauer, B. (2016). Surfactant and Polymer-Coated Sand Effects on Deficit Irrigated Bermudagrass Turf. *Agronomy Journal*, 108(6), 2245-2255
- Schiavon, M., Serena, M., Leinauer, B., **Sallenave, R.**, Baird, J.H. (2015). Seeding date and irrigation system effects on establishment of warm-season turfgrasses. *Agronomy J.* 107(3):880-886
- Serena, M., B. Leinauer, M. Schiavon, B. Maier, and **R. Sallenave**. (2014). Establishment and Rooting Response of Bermudagrass Propagated with Saline Water and Subsurface Irrigation. *Crop Science* 54(2):827-836.
- Schiavon, M., B. Leinauer, M. Serena, B. Maier, and **R. Sallenave**. (2014). Plant Growth Regulator and Soil Surfactants' Effects on Saline and Deficit Irrigated Warm-season Grasses: I. Turf Quality and Soil Moisture. *Crop Science* 54(6):2815-2826.
- Stoeckle, B.C., D.E. Cowley, Y. Schaack, K.S. Macdonald III, **R. Sallenave**, and R. Kuehn. 2013. Microsatellites for North American species of *Triops* (Branchiopoda: Notostracan). *Journal of Crustacean Biology* 33(1): 48-55.
- Schiavon, M., B. Leinauer, M. Serena, **R. Sallenave**, and B. Maier. 2013. Establishing Tall Fescue and Kentucky Bluegrass Using Subsurface Irrigation and Saline Water. *Agronomy Journal* Volume 105 issue 1 pages 183-190
- Serena, M., B Leinauer, **R. Sallenave**, M. Schiavon, and B. Maier. 2012. Turfgrass Establishment from polymer-coated seeds under saline irrigation. *HortScience* 47(12): 1789-1794.
- Schiavon, M., B. Leinauer, M. Serena, **R. Sallenave**, and B. Maier. 2012. Bermudagrass and Seashore paspalum establishment from seeds using different irrigation methods and water quality. *Agronomy Journal* 104(3): 706-714.
- Serena, M., B. Leinauer, **R. Sallenave**, M. Schiavon, and B. Maier. 2012. Media selection and seed coating influence germination of Turfgrasses under salinity. *HortScience* 47(1):116-120.
- Sevostianova, E., B. Leinauer, **R. Sallenave**, D. Karcher, and B. Maier. 2011. Soil Salinity and Quality of Sprinkler and Drip Irrigated Warm-Season Turfgrasses. *Agronomy Journal* 103(6):1773-1784
- Sevostianova, E., B. Leinauer, **R. Sallenave**, D. Karcher, and B. Maier. 2011. Soil Salinity and Quality of Sprinkler and Drip Irrigated Cool-Season Turfgrasses. *Agronomy Journal* 103(5):1503-1515.
- Macdonald III, K.S., **R. Sallenave**, and D.E. Cowley. 2011 Morphological and genetic variation in *Triops* (Branchiopoda: Notostraca) from ephemeral waters in the northern Chihuahuan Desert of North America. *Journal of Crustacean Biology* 31(3): 468-484.

- Cowley, D.E., J.C. Alleman, **R. Sallenave**, R.R. McShane and P.D. Shirey. 2009 Effect of salinity on specific gravity and viability of eggs of North American minnows (Ciprinidae). Scientia Marina 73S1: 47-58.
- Sallenave, R. 2011. Environmental issues surrounding turf-dominated urban landscapes. *In*: S. Cockerham and B. Leinauer (Eds): Turfgrass water conservation, second edition. University of California Division of Agriculture and Natural Resources Publication 3523 (pp. 15-29). Richmond, CA: ANR Communication Services.
- Shirey, P.D., D.E. Cowley and **R. Sallenave**. 2007. Diatoms from gut contents of museum specimens of an endangered minnow suggest long-term ecological changes in the Rio Grande (USA). Journal of Paleolimnology 40: 263-272.
- Cowley, D.E., R.C. Wissmar and **R. Sallenave**. 2007. Fish assemblages and seasonal movements of fish in irrigation canals and river reaches of the middle Rio Grande, New Mexico (U.S.A.). Ecology of Freshwater Fish 16(4): 548-558.
- Shemai, B., **R. Sallenave** and D.E. Cowley. 2007. Competition between hatchery-raised Rio Grande cutthroat trout and wild brown trout. North American Journal of Fisheries Management 27: 315-325.
- Cowley, D.E. and **R. Sallenave**. 2006. Conservation and Management of Aquatic Resources in Arid Lands. Reviews in Fishery Sciences 14: 25-27.
- Sallenave, R. and D.E. Cowley. 2006. Science and effective policy for managing aquatic resources. Reviews in Fishery Sciences 14: 203-210.
- Sallenave, R., J. Alleman, J. Padilla, and D.E. Cowley. 2005. First record of *Daphnia lumholtzi* in the Rio Grande Basin, New Mexico. Journal of Freshwater Ecology 20(4): 775.
- Sallenave, R. and D.E. Cowley (guest editors). 2004. Aquatic resources in arid lands: Issues and opportunities. Aquatic Sciences 66: 343-345.
- Leinauer, B.L., **R. Sallenave**, D. VanLeeuwen and H. Schulz. 2004. A comparison of construction types and their associated irrigation systems: effects on turfgrass quality, drought avoidance and irrigation water use. Acta Horticulturae (ISHS) 661: 123-129.
- Leinauer, B., P.E. Rieke, D. VanLeeuwen, **R. Sallenave**, J. Makk and E. Johnson. 2001. Effects of soil surfactants on water retention in turfgrass rootzones. International Turfgrass Society Research Journal 9: 542-547.
- Sallenave, R.M. and Fomin, A. 1997. Some advantages of the duckweed test to assess the toxicity of environmental samples. Acta Hydrochim. Hydrobiol. 25(3):135-140
- Sallenave, R.M. and K.E. Day. 1997. Uptake and bioconcentration of 2,2',4,4',5,5'-Hexachlorobiphenyl by lotic periphyton. Water Quality Research Journal of Canada 32(3):619-635.
- Fomin, A. and **R. Sallenave**. 1996. The effects of gaseous NO<sub>2</sub> on nitrate assimilation and growth in *Spirodela polyrhiza*. Angewandte Botanik 70: 144-149.
- Sallenave, R.M. and A. Fomin. 1996. The feasibility of using insects as on-line biomonitors of industrial emissions. *In*: Bio-indication: Neue Entwicklungen Nomenklatur synökologische Aspekte. Verlag Günter Heimback, Ostfildern. pp 123-134.
- Sallenave, R.M., K.E. Day and D.P. Kreuzweiser. 1994. The role of grazers and shredders in the retention and downstream transport of a PCB in lotic environments. Environmental Toxicology and Chemistry 13(11): 1843-1847.
- Sallenave, R.M. and K.E. Day. 1991. Secondary production of benthic stream invertebrates in agricultural watersheds with different land management practice. Chemosphere 23(19): 57-76.
- Sallenave, R.M. and D.R. Barton. 1990. Changes in the benthic invertebrate community along a natural turbidity gradient in Lake Temiskaming, Ont.-Que. Hydrobiologia 206: 225-234.

*Extension Publications, Proceedings, Published Abstracts, Newsletter articles:*

- Sallenave, R. 2020. Cyanobacteria (Blue green algae) in our waters: Agricultural Best Management Practices (BMPs) to increase resilience to algal blooms. [https://aces.nmsu.edu/pubs/\\_w/W106.pdf](https://aces.nmsu.edu/pubs/_w/W106.pdf) New Mexico State University Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences.
- Sallenave, R. and R.C. Schulz. 2019. Decoupled Aquaponics: A comparison to Single-loop Aquaponics. [https://aces.nmsu.edu/pubs/\\_h/H173.pdf](https://aces.nmsu.edu/pubs/_h/H173.pdf) New Mexico State University Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences.
- Sallenave, R. 2019. Understanding and preventing fish kills in your pond. (Revised) [https://aces.nmsu.edu/pubs/\\_w/W105.pdf](https://aces.nmsu.edu/pubs/_w/W105.pdf) New Mexico State University Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences.
- Sallenave, R., Ziegler, K., Ganguli, A. C. (2018). Monitoring your water well. [https://aces.nmsu.edu/pubs/\\_m/M118/welcome.html](https://aces.nmsu.edu/pubs/_m/M118/welcome.html) New Mexico State University Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences.
- Sallenave, R. (2018). Toxic Golden Algae (*Prymnesium parvum*). (Revised). [http://aces.nmsu.edu/pubs/\\_circulars/CR647.pdf](http://aces.nmsu.edu/pubs/_circulars/CR647.pdf) New Mexico State University Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences.
- Sallenave, R., Carrasco, C., Cowley, D. E. (2018). Fishes in the Middle and Lower Rio Grande irrigation system of New Mexico. (Revised). [http://aces.nmsu.edu/pubs/\\_circulars/CR653.pdf](http://aces.nmsu.edu/pubs/_circulars/CR653.pdf) New Mexico State University Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences.
- Sallenave, R. 2017. Nitrate in drinking water (Revised). Guide M-114. [http://aces.nmsu.edu/pubs/\\_m/M114.pdf](http://aces.nmsu.edu/pubs/_m/M114.pdf) New Mexico State University Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences.
- Sallenave, R. 2017. Treating and storing water for emergency use (Revised). Guide M-116. [http://aces.nmsu.edu/pubs/\\_m/M116.pdf](http://aces.nmsu.edu/pubs/_m/M116.pdf) New Mexico State University Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences.
- Sallenave, R. 2016. Important water quality parameters in aquaponics systems. Circular 680 [http://aces.nmsu.edu/pubs/\\_circulars/CR680.pdf](http://aces.nmsu.edu/pubs/_circulars/CR680.pdf) New Mexico State University Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences.
- Sallenave, R. 2016. Water quality for livestock and poultry (Revised). Guide M-112. [http://aces.nmsu.edu/pubs/\\_m/M112.pdf](http://aces.nmsu.edu/pubs/_m/M112.pdf) New Mexico State University Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences
- Sallenave, R. 2016. Managing aquatic weeds. Circular 681. [http://aces.nmsu.edu/pubs/\\_circulars/CR681.pdf](http://aces.nmsu.edu/pubs/_circulars/CR681.pdf) New Mexico State University Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences
- Sallenave, R. 2015. Stream biomonitoring using benthic invertebrates. Circular 677. [http://aces.nmsu.edu/pubs/\\_circulars/CR677.pdf](http://aces.nmsu.edu/pubs/_circulars/CR677.pdf) New Mexico State University Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences
- Sallenave, R. 2015. New Mexico Aquaculture. (Revised). Circular 543 [http://aces.nmsu.edu/pubs/\\_circulars/CR543.pdf](http://aces.nmsu.edu/pubs/_circulars/CR543.pdf) New Mexico State University

- Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences.
- Sallenave, R. 2014. Is Aquaponics right for you? Guide H-170 [http://aces.nmsu.edu/pubs/\\_h/H170.pdf](http://aces.nmsu.edu/pubs/_h/H170.pdf)
- Sallenave, R. 2012. Understanding water quality parameters to better manage your pond. Guide W-104. [http://aces.nmsu.edu/pubs/\\_w/W104.pdf](http://aces.nmsu.edu/pubs/_w/W104.pdf) New Mexico State University Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences.
- Sallenave, R. 2011. Managing filamentous algae in ponds. [http://aces.nmsu.edu/pubs/\\_w/W103.pdf](http://aces.nmsu.edu/pubs/_w/W103.pdf) Guide W-103. New Mexico State University Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences.
- Sallenave, R., P. Torres, T. Dominguez, and J. Turner. 2016. Consecuencias criminales de la negligencia y del abuso equino en Nuevo México. (Criminal consequences of equine neglect and abuse in New Mexico) Guía B-714 [http://aces.nmsu.edu/pubs/\\_b/B714sp.pdf](http://aces.nmsu.edu/pubs/_b/B714sp.pdf)
- Sallenave, R., P. Torres, T. Dominguez, and J. Turner. 2016. ¿Está preparado para ser dueño de un caballo? (Are you ready to own a horse?). Guía B-715 [http://aces.nmsu.edu/pubs/\\_b/B715sp.pdf](http://aces.nmsu.edu/pubs/_b/B715sp.pdf)
- Sallenave, R. New Mexico and other Western states on high alert for the invasive Zebra and Quagga mussels (Vol 45, May 2019). Cooperative Extension Service.
- Sallenave, R. Recent vote for NOSB supports organic certification for aquaponics growers (Vol. 33, April 2018). Cooperative Extension Service.
- Sallenave, R. Upcoming National Aquaculture Conference Focuses on Aquaculture Extension Education across the Nation (Vol. 22, May 2017). Cooperative Extension Service.
- Sallenave, R. Water quality: protecting aquatic resources Newsletter, Pajarito Environmental Education Center, Los Alamos, NM Nature Notes (3<sup>rd</sup> ed., Vol 16. July 2016).
- Sallenave, R. State of New Mexico Waters. Newsletter, New Mexico State University, Extension Animal Sciences and Natural Resources Department, Volume 77, May 2016.
- Sallenave, R. House Bill 201 could be a game changer for New Mexico aquaponics growers. Newsletter, New Mexico State University, Extension Animal Sciences and Natural Resources Department, Volume 66, June 2015.
- Sallenave, R. Some facts about cyanobacterial harmful algal blooms. Newsletter, New Mexico State University, Extension Animal Sciences and Natural Resources Department, Volume 56, June 2014
- Sallenave, R. Growing shrimp sustainably in New Mexico. Newsletter. New Mexico State University, Extension Animal Sciences and Natural Resources Department, Volume 43, May 2013.
- Sallenave, R. Oxygen depletion in recreational ponds. Newsletter. New Mexico State University, Extension Animal Sciences and Natural Resources Department, Volume 30, April 2012.
- Sallenave, R. Best Management Practices to reduce pesticide and fertilizer inputs to our water bodies. Newsletter. New Mexico State University, Extension Animal Sciences and Natural Resources Department, Volume 21, June 2011.
- Sallenave, R. Aquatic Invasive Species in New Mexico. Newsletter. New Mexico State University, Extension Animal Sciences and Natural Resources Department, Volume 7, March 2010.
- Sallenave, R. and R.L. Horn. 2016. Tadpole shrimp (Branchiopoda: Notostraca: *Triops*) diversity and distribution in the arid Southwestern United States. Proceedings from the IV Russian International conference "Biodiversity: global and regional processes", June 23-27, Ulan Ude, Russia.
- Serena, M., M. Schiavon, R. Sallenave, and B. Leinauer. 2016. Surfactants and Trinexapac-ethyl improve rooting and quality of deficit-irrigated warm-season turfgrasses. 5<sup>th</sup> European

Turfgrass Society Conference 2016, Albufeira, Portugal (June 5-8, 2016).

**GRANTS AWARDED:**

Co-PI Participatory Approaches to Agroecosystem Resilience in Times of Drought (ARID): An Example from the Southern Great Plains. USDA-NIFA/Agriculture and Food Research Initiative. 2018-2023. Ganguli, A. (PI), Sallenave, R. Ghimire, R., Dubois, D., Steele, C., Gleason, J.B., \$594,000,

Co-PI Pairing Groundwater and Climate Data to Inform Sustainable Ranch Management in Uncertain Times. USDA-SARE, Utah State University 2018-2021. \$27,159.

PI Educational programming in watershed stewardship, water quality, and aquatic ecology. USDA-NIFA Renewable Resources Extension Act Capacity Grant 2020. \$5,000.

PI Educational programming in watershed stewardship, water quality, and aquatic ecology. USDA-NIFA Renewable Resources Extension Act Capacity Grant 2019. \$3,600.

PI Educational programming in watershed stewardship, water quality, and aquatic ecology. USDA-NIFA Renewable Resources Extension Act Capacity Grant 2018. \$5,000.

PI Extension programming in water quality monitoring, biomonitoring using macroinvertebrates, and watershed stewardship. USDA-NIFA Renewable Resources Extension Act Capacity Grant. 2017. \$6,000.

PI Extension programming in watershed stewardship, stream ecology and aquatic ecosystem health and water quality. USDA-NIFA Renewable Resources Extension Act Capacity Grant. 2016. \$6,000.

Co-PI Biodiversity of Natural and Man-made ephemeral catchments in New Mexico. 2011-2012. NM Game and Fish Department. Macdonald and Sallenave. \$8000.00

Co-PI Ecology of Irrigation Drainage Canals and Ephemeral Wetlands along the Rio Grande of New Mexico. Rio Grande Basin Initiative, USDA. 2007–2011, Cowley and Sallenave. \$179,568

Co-PI Agricultural Irrigation Systems and Conservation of Native Fishes. Rio Grande Basin Initiative, USDA. 2004-2007. Cowley and Sallenave. \$257,896

**PROFESSIONAL AFFILIATIONS AND SERVICE**

- Society of Freshwater Science
- American Fisheries Society
- Aquaponics Association
- New Mexico Aquaponics Association
- Western Regional Aquaculture Center (WRAC) Extension Technical Committee
- WRAC Board of Directors
- USDA/NOAA Sea Grant National Aquaculture Extension Steering Committee
- New Mexico Extension Specialists Association
- Epsilon Sigma Phi Society