

Postgrado en Ecología Tropical
Instituto de Ciencias Ambientales y Ecológicas (ICAE)
Universidad de Los Andes, Mérida, Venezuela

TALLER TUTORIAL

“VALORACIÓN CUANTITATIVA DEL SÍNDROME NODRIZA EN AMBIENTES ÁRIDOS”

Dirigido a estudiantes del Programa de Doctorado en el Postgrado de Ecología Tropical, Fac. Ciencias, U.L.A.

Responsable: Pascual Soriano

Nº de horas Teóricas: 32

Nº de Créditos: 03 Unidades Crédito

Objetivo:

Entrenar al estudiante en la aplicación de metodologías para la evaluación de asociaciones espaciales de plantas en ambientes áridos. Así mismo se pretende que el estudiante adquiera las destrezas necesarias para encarar el planteamiento, diseño y ejecución de un proyecto de investigación en la temática de la facilitación.

Tópicos tratados:

Valoración cuantitativa sobre la interacción entre cactus columnares y leguminosas arbustivas en dos sitios contrastantes del enclave semiárido de Lagunillas, Edo. Mérida, Venezuela. Los métodos aplicados fueron empleados para evaluar los siguientes aspectos:

- Asociación espacial entre los cactus columnares (*Stenocereus repandus*, *Cereus repandus* y *Pilosocereus tillianus*) y las leguminosas arbustivas (*Prosopis juliflora*, *Acacia farnesiana* y *A. macracantha*) que ocurren en ambos sitios de estudio.
- Relaciones tamaño-distancia entre ambas formas de vida como medida indirecta de relaciones competitivas.

Modalidad a seguir y evaluación:

Mediante la discusión en el laboratorio y varias salidas de campo, el estudiante propondrá un problema a resolver dentro de el tema de la facilitación. Seguidamente se discutirá una propuesta metodológica para abordarlo y se pondrá en marcha su ejecución. La cual culminará con la presentación de un manuscrito en el formato de una publicación científica.

La calificación del Taller se basará en la presentación del manuscrito referido.

Bibliografía seleccionada

- Briones, O., Montaña, C., and Ezcurra, E. 1996. Competition between three Chihuahuan desert species: evidence from plant-distance relations and root distribution. *Journal of Vegetation Science* 7: 453-460.
Bertness, M.D., and Callaway, R.M. 1994. Positive interactions in communities. *Trends in Ecology and Evolution* 9: 191-193.
Callaway, R.M. 1995. Positive interactions among plants. *Botanical Review* 61: 306-349.

- Callaway, R.M. 1997. Positive interactions in plant communities and the individualist-continuum concept. *Oecologia*, 112: 143-149.
- Callaway, R.M., and Walker, L.R. 1997. Competition and facilitation: a synthetic approach to interactions in plant communities. *Ecology* 78: 1958-1965.
- Campos, C.M., and Ojeda, R.A. 1997. Dispersal and germination of *Prosopis flexuosa* (Fabaceae) seeds by desert mammals in Argentina. *Journal of Arid Environments* 35: 707-714.
- de Viana, M.L., Suhring, S., and Manly, B. 2001. Application of randomization methods to study the association of *Trichocereus pasacana* (Cactaceae) with potential nurse plants. *Plant Ecology* 156: 193-197.
- Ehleringer, J.R. 1984. Intraspecific competitive effects on water relations, growth and reproduction in *Encelia farinose*. *Oecologia* 63: 153-158.
- Flores-Martínez, A., Ezcurra, E., and Sánchez-Colón, S. 1994. Effect of *Neobuxbaumia tetetzo* on growth and fecundity of its nurse plant *Mimosa luisana*. *Journal of Ecology* 82: 325-330.
- Flores, J. and Jurado, E. 2003. Are nurse-protégé interactions more common among plants from arid environments?. *Journal of Vegetation Science* 14: 911-916.
- Fowler, N. 1986. The role of competition in plant communities in arid and semiarid regions. *Annual Review of Ecological Systematic* 17: 89-110.
- Franco, A.C., and Nobel, P.S. 1989. Effect of nurse plants on the microhabitat and growth of cacti. *Journal of Ecology* 77: 870-886.
- Mandujano, M., Montaña, C., and Eguiarte L.E. 1996. Reproductive ecology and inbreeding depression in *Opuntia rastrera* (Cactaceae) in the Chihuahuan Desert: why are sexually derived recruitments so rare?. *American Journal of Botany* 83: 63-70.
- McAuliffe, J.R. 1984. Sahuaro-nurse tree associations in the Sonoran Desert: competitive effects of sahuaros. *Oecologia* 64: 319-321.
- McAuliffe, J.R. 1988. Markovian dynamics of simple and complex desert plant communities. *American Naturalist* 131: 459-490.
- Montiel, S., and Montaña, C. 2000. Vertebrate frugivory and seed dispersal of a Chihuahuan Desert cactus. *Plant Ecology* 146: 221-229.
- Nobel, P.S. 1988. Environmental biology of agaves and cacti. Cambridge University Press. Cambridge.
- Pielou, E.C. 1962. The use of plant-to-neighbour distances for the detection of competition. *Journal of Ecology* 50: 357-367.
- Sarmiento, G. 1972. Ecological and floristic convergences between seasonal plant formations of tropical and subtropical South America. *Journal of Ecology* 60: 367-410.
- Sarmiento, G. 1975. The dry formations of South America and their floristic connections. *Journal of Biogeography* 2: 233-251.
- Sosa, M., and Soriano, P.J. 1996. Resource availability, diet and reproduction in *Glossophaga longirostris* (Mammalia: Chiroptera) in an arid zone of the Venezuelan Andes. *Journal of Tropical Ecology* 12: 805-818.
- Sosa, V., and Fleming, T. 2002. Why are columnar cacti associated with nurse plant?. In: Fleming, T. & Valiente-Banuet, A. (Eds.), *Columnar cacti and their mutualists*, pp. 306-323. Tucson: The University of Arizona Press.
- Soriano, P.J., Naranjo, M.E., Rengifo, C., Figuera, M., Rondón, M., and Ruíz, L. 1999. Aves consumidoras de frutos de cactáceas columnares del enclave semiárido de Lagunillas, Mérida, Venezuela. *Ecotropicos* 12: 91-100.
- Soriano, P.J., and Ruíz, A. 2002. The role of bats and birds in the reproduction of columnar cacti in the Northern Andes. In: Fleming, T.H., and Valiente-Banuet, A. (Eds.). *Evolution, ecology and conservation of columnar cacti and their mutualists*. pp. 241-263. Arizona University Press, Tucson.
- Suzan, H., Nabhan, G.P., and Pattern, D.T. 1996. The importance of *Olneya tesota* as nurse plant in the Sonoran Desert. *Journal of Vegetation Science* 7: 635-644.

- Tewksbury, J.J., Nabhan, G.P., Norman, D., Suzán, H., Tuxill, J., and Donovan, J. 1999. In situ conservation of wild chiles and their biotic associates. *Conservation Biology* 13: 98-107.
- Tewksbury, J.J., and Lloyd, J.D. 2001. Positive interactions under nurse-plants: spatial scale, stress gradients and benefactor size. *Oecologia* 127: 425-434.
- Valiente-Banuet, A., and Ezcurra, E. 1991. Shade as a cause of the association between the cactus *Neobuxbaumia tetetzo* and the nurse plant *Mimosa luisana* in the Tehuacán Valley, Mexico. *Journal of Ecology* 79: 961-971.
- Valiente-Banuet, A., Vite, F., and Zavala-Hurtado, J.A. 1991. Interaction between the cactus *Neobuxbaumia tetetzo* and the nurse shrub *Mimosa luisana*. *Journal of Vegetation Science* 2: 11-14.
- Villagra, P.E., Marone, L., and Cony, M.A. 2002. Mechanisms affecting the fate of *Prosopis flexuosa* (Fabaceae, Mimosoideae) seeds during early secondary dispersal in the Monte Desert, Argentina. *Austral Ecology* 27: 416-421.
- Wilson, S.D. 1991. Variation in competition in eucalypt forests: the importance of standardization in pattern analysis. *Journal of Vegetation Science* 2: 577-586.
- Yeaton, R.I., and Cody, M.L. 1976. Competition and spacing and plants communities: The northern Mohave desert. *Journal of Ecology* 64: 689-696.
- Yeaton, R.I., and Romero, A. 1986. Organization of vegetation mosaics in the *Acacia schaffneri*-*Opuntia streptacantha* association, Southern Chihuahuan Desert, Mexico. *Journal of Ecology* 74: 211-217.