

DeSantis, R. D., Hallgren, S. W., Lynch, T. B., Burton, J. A. & Palmer, M. W. (2010): Long-term directional changes in upland Quercus forests throughout Oklahoma, USA. Journal of Vegetation Science 21: 606-615. DOI: 10.1111/j.1654-1103.2010.01168.x

Teljes hivatkozás: DeSantis, R. D., Hallgren, S. W., Lynch, T. B., Burton, J. A. & Palmer, M. W. (2010): Long-term directional changes in upland Quercus forests throughout Oklahoma, USA. *Journal of Vegetation Science* 21: 606-615. DOI: 10.1111/j.1654-1103.2010.01168.x

Rövid hivatkozás: DeSantis et al. (2010)

Első szerző: DeSantis, Ryan D.

Év: 2010

Összefoglalás

Long-term directional changes in upland Quercus forests throughout Oklahoma, USA

Ryan D. DeSantis, Stephen W. Hallgren, Thomas B. Lynch, Jesse A. Burton & Michael W. Palmer

Abstract:

Questions: (1) How have the composition and structure of undisturbed upland Quercus forests changed over 50 years across a large region and moisture gradient; (2) What factors are associated with long-term and broad-scale changes in these forests?

Location: Oklahoma, USA.

Methods: We re-sampled 30 forest stands originally sampled in the 1950s across a large geographical area and compared basal area, tree density, and sapling density between the sampling periods using paired t-tests, CCA, and DCA. We examined vegetation dynamics in the context of drought indices compiled for the sample period.

Results: Total and *Quercus stellata* basal area and tree density increased, but *Q. stellata* and *Q. marilandica* sapling density decreased. *Juniperus virginiana* and woody species richness increased for all measures. DCA indicated that re-sampled stands generally changed from *Q. stellata*-*Q. marilandica*-dominated

forests to forests with greater woody species richness and more *J. virginiana*. *Q. stellata* remained a dominant tree species; otherwise, composition shifted towards mesophytic and invasive woody species. Measurements taken in the 1950s immediately followed a major drought; whereas subsequent decades were significantly moister.

Conclusions: Fire exclusion and drought may have played an important role in driving changes towards lower dominance by *Quercus*, increased importance of mesophytic and invasive species, and greater woody species richness. These phenomena are similar to those found in *Quercus*-dominated forests throughout the northern hemisphere.

[erdődinamika, lék dinamika, szukcesszió](#)

[erdőszervezet: közösség\(szerkezet\)](#)

[klíma: mikroklima, állományklíma](#)

Megjegyzések

Long-term directional changes in upland *Quercus* forests throughout Oklahoma, USA

Ryan D. DeSantis, Stephen W. Hallgren, Thomas B. Lynch, Jesse A. Burton & Michael W. Palmer

Tartalom:

Introduction

Methods

Study area

Vegetation sampling

Environmental variables

Data analysis

Results

Basal area

Tree density

Sapling density

Drought incidence

Discussion

Acknowledgements

References

Supporting information

Drought; Fire exclusion; Forest dynamics; *Juniperus virginiana*; mesophication; Oak; Oklahoma; *Quercus marilandica*; *Quercus stellata*; Species composition; Vegetation change

Címszavazva - GE

Kiadó: International Association for Vegetation Science

Folyóirat: Journal of Vegetation Science

Lelőhely: ER Archívum (2010/P-005)

Típus: tudományos folyóiratcikk

Katalógusba vette: Gulyás Györgyi

Katalógusbavétel időpontja: sze, 09/08/2010 - 12:00