

Goetsch, Ch, J Wigg, AA Royo, T Ristau, WP Carson (2011) Chronic over browsing and biodiversity collaps in a forest understory in Pennsylvania: Results from a 60 year-old deer exclusion plot. The Journal of the Torrey Botanical Society. 138 (2): 220-224

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Short reference: Goetsch et al. (2011)

First author: Goetsch, Chandra

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Abstract

We evaluated the impact of chronic deer over browsing on the diversity and abundance of understory forbs and shrubs within a forest stand in the Allegheny High Plateau Region of Pennsylvania by comparing vegetation inside a 60-year-old exclosure to vegetation within an adjacent reference site. This is the oldest known exclosure in the Eastern Deciduous Forest. Browsing caused the formation of an extremely low diversity herbaceous understory dominated by a single fern species, caused the local extirpation of shrubs, and drove forbs to extremely low abundance (<0.2% cover/m² vs. 43% inside the exclosure). Our results confirm previous findings that demonstrate that browsing has caused 60–80% declines in herb and shrub richness regionally. Because many of these species have low dispersal and reproductive rates, we predict longterm legacy effects if deer numbers are ever reduced. Our results combined with other studies provide information on shrub and herb abundance in the absence of browsing that may serve as a baseline to compare potential community recovery in the future.

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