Forest Response to CO₂

Publications on or related to greenhouse studies
at the Desert Research Institute and field studies at Placerville
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Electric Power Research Institute WO4384-01/WO9110-02

Peer-Reviewed Published Papers about Placerville and Related Greenhouse Studies

- Johnson, D.W., D.R. Geisinger, R.F. Walker, J. Newman, J.M. Vose, K.J. Elliott, and J.T. Ball. 1994. Soil pCO₂, soil respiration, and root activity in CO₂-fumigated and nitrogen-fertilized ponderosa pine. *Plant Soil* 165: 111-121.
- Johnson, D.W., J.T. Ball, and R.F. Walker. 1995. Effects of CO₂ and nitrogen on nutrient uptake in ponderosa pine seedlings. *Plant Soil* 168: 144-153.
- Johnson, D.W., R.F. Walker, and J.T. Ball. 1995. Lessons from lysimeters: Soil N release from disturbance compromises controlled environment study. *Ecol. Appl.* 5: 395-400.
- Johnson, D.W., R.F. Walker, and J.T. Ball. 1995. Combined effects of nitrogen and elevated CO₂ on soils from controlled environment studies. *Water, Air, and Soil Pollut.* 85: 1551-1556.
- Johnson, D.W., J.T. Ball, and R.F. Walker. 1997. Effects of CO₂ and nitrogen fertilization on vegetation and soil nutrient content in juvenile ponderosa pine. *Plant and Soil* 190: 20-40.
- Johnson, D.W., R.B. Thomas, K.L. Griffin, D.T. Tissue, J.T. Ball, B.R. Strain and R.F. Walker. 1998. Effects of CO₂ and N on growth and N uptake in ponderosa and loblolly pine. *J. Environ. Qual.* 27: 414-425.
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- Tingey, D.T., D.L. Phillips, M.G. Johnson, M.J. Storm, and J.T. Ball. 1997. Effects of elevated CO₂ and N fertilization on fine root dynamics and fungal growth in seedling *Pinus ponderosa*. *Environ and Exper Bot.* 37:73-83.
- Vose, J.M., K.J. Elliott, D.W. Johnson, R.F. Walker, M.G. Johnson, and D.T. Tingey. 1995. Effects of elevated CO₂ and N fertilization on soil respiration from ponderosa pine (*Pinus ponderosa*) in open-top chambers. *Can. J. For. Res.* 25: 1243-1251.

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- Vose, J.M., K.J. Elliot, D.W. Johnson, D.T. Tingey, and M.G. Johnson. 1997. Soil respiration response to three years of elevated CO₂ and N fertilization in ponderosa pine (*Pinus ponderosa* Doug. ex Laws.). *Plant Soil* 190:19-28.
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- Walker, R.F., D.R. Geisinger, D.W. Johnson and J.T. Ball. 1997. Elevated atmospheric CO₂ and soil N fertility effects on growth, mycorrhizal colonization, and xylem water potential of juvenile ponderosa pine in a field soil. *Plant Soil* 195: 25-36.
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- Walker, R.F., D.W. Johnson, and D.R. Geisinger, 1999. Growth response of juvenile ponderosa pine to elevated atmospheric CO₂ and soil N with emphasis on root system development. *J. Sustainable Forestry*, Vol 8, pp 23-41.

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- Johnson, D.W. 1993. Carbon in forest soils: Research Needs. *New Zealand J. For. Sci.* 23: 354-366.
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- Johnson, D.W., P.H. Henderson, J.T. Ball, and R.F. Walker. 1996. Effects of CO₂ and N on growth and N dynamics in ponderosa pine: Results from the first two growing seasons. Ch. 2 IN: G.W. Koch and H.A. Mooney (eds). *Carbon Dioxide and Terrestrial Ecosystems*. Academic Press, San Diego. pp. 23-40.

Vose, J.M., K.J. Elliot, and D.W. Johnson. 1994. Ch. 16. Soil CO₂ flux in response to elevated atmospheric CO₂ and nitrogen fertilization: Patterns and Methods. IN: R. Lal, J. Kimble, E. Levine, and B.A. Stewart (eds.) Soils and Global Change. Advances in Soil Science. Lewis Publishers, Boca Raton - London - Tokyo. pp. 199-208

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Johnson, D.W. 1995. Role of carbon in the cycling of other nutrients in forested ecosystems. IN: J.M Kelly and W.M. McFee (eds) Carbon: Forms and functions in forest soils. Soil Science Society of America, Madison, WI. pp. 299-328

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Papers in Press

Johnson, D.W. Simulated effects of elevated CO₂ on nitrogen cycling using the NuCM model. Tree Physiology, (in press).

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Technical Reports, Placerville results

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Technical Reports, related study

Hoylman, A.M., A.Peterson, J. B. Picone, J. T. Ball. Climate Change and Wetland Processes in the Southwest United States: Response of Riparian Communities to CO₂ levels. US Bureau of Reclamation, Lower Colorado Region. 62 pp. (Related study)

Theses

Kiirats, Olavi. Regulation of photosynthesis at above-ambient CO₂. Master of Science in Biochemistry. University of Nevada, Reno, June 1998.

Papers submitted/in review

Peterson, Andrew G. J. Timothy Ball, Yiqi Luo, Christopher B. Field, Peter S. Curtis, Kevin L. Griffin, Carla A. Gunderson, Richard J. Norby, David T. Tissue, Manfred Forstreuter, Ana Rey, Christoph S. Vogel, and CMEAL participants. Quantifying the interactive effects of atmospheric CO₂ concentration, leaf nitrogen content, and leaf mass per area on photosynthesis. In revision, to be submitted to *Plant, Cell and Environment*.

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