Classic Article

Introduction to the Article by H.E. Wright Jr. and M.L. Heinselman

Martin E. Alexander

Department of Renewable Resources and Alberta School of Forest Science and Management, University of Alberta, 116 Street and 85 Avenue, Edmonton, Alberta T6G 2H1, Canada
Tel.: +1-780-417-0244; e-mail: mea2@telus.net

A symposium on The Ecological Role of Fire in Natural Conifer Forests of Western and Northern North America was held at the annual meetings of the Ecological Society of America and the American Institute of Biological Sciences at the University of Minnesota in August 1972. It featured eight presentations by a very distinguished group of speakers:

- Miron L. Heinselman. Fire in the Virgin Forests of the Boundary Waters Canoe Area, Minnesota.
- Albert M. Swain. A History of Fire and Vegetation in Northeastern Minnesota as Recorded in Lake Sediments.
- Sidney S. Frissell, Jr. The Importance of Fire as a Natural Ecological Factor in Itasca State Park, Minnesota.
- James R. Habeck and Robert W. Mutch. Fire-Dependent Forests in the Northern Rocky Mountains.
- Lloyd L. Loope and George E. Gruell. The Ecological Role of Fire in the Jackson Hole Area, Northwestern Wyoming.
- J.S. Rowe and G.W. Scotter. Fire in the Boreal Forest.
- Leslie A. Viereck. Wildfire in the Taiga of Alaska.
- Bruce M. Kilgore. The Ecological Role of Fire in Sierran Conifer Forests.

The resulting papers from the symposium were published in the form of a proceedings as Volume 3 Issue 3 of *Quaternary Research* in October 1973. Drs. Miron L. (Bud) Heinselman and Herbert E. Wright Jr. served as guest editors. I came to purchase a copy soon after I began my M.Sc. degree program in forest fire science at Colorado State University in January 1975 and have always held the proceedings in high regard.

As a result of a comment made by the symposium chairman, Dr. Charles F. Cooper of San Diego State University, the two guest editors included an introduction as a ninth paper in the proceedings that covered the following general, overriding ecological principles associated with the role of fire (Wright and Heinselman 1973):

- Fire influences the physical-chemical environment.
- Fire controls plant species and communities.
- Fire regulates dry-matter production and accumulation.
- Fire determines wildlife habitat patterns and populations.
- Fire influences insects, parasites, fungi, etc.
- Fire controls major ecosystem processes and characteristics.

Their paper is reproduced here in recognition of its seminal nature with respect to the field of fire ecology. Others would eventually come to try emulate this foundational piece of work (e.g., Wade *et al.* 1981), including myself (Alexander and Euler 1981; Lynham *et al.* 2002). Heinselman (1978) later on expanded upon the content of the principles.

I have yet to have the privilege of meeting Dr. Herb Wright, a geologist by training and presently an emeritus faculty member with the Department of Earth Sciences at the University of Minnesota (Figure 1). However, his reputation as one of the world's most productive and highly recognized Quaternary scientists precedes him[1], a journey he has partially chronicled himself (Wright 2010). Even in his late 90s, Dr. Wright continues to be actively engaged in the field of Quaternary paleoecology.

Dr. Bud Heinselman (1920–1993) worked as a forest ecologist and research scientist for the US Forest Service at the Lakes Forest Experiment Station and North Central Forest Experiment Station from 1948 to 1974. He was active in the environmental movement (Proescholdt 2014), served as a founding member of the Friends of the Boundary Waters Wilderness (Proescholdt *et al.* 1995), and was an expert on the ecology of the Boundary Waters Canoe Area (BWCA) Wilderness of northern Minnesota (Heinselman 1996). The research associated with his classic landmark paper on the fire history of the BWCA, which also appeared in the *Quaternary Research* proceedings, served to document stand origins back to the year 1595 (Figure 2).

I did have the good fortune to personally get to know Dr. Heinselman beginning in September 1978 when he and his wife Fran hosted me for a couple of days at their home in St. Paul, Minnesota. It was during this time that Bud instructed me to "think like a fire" when it came to reconstructing the fire history of area.

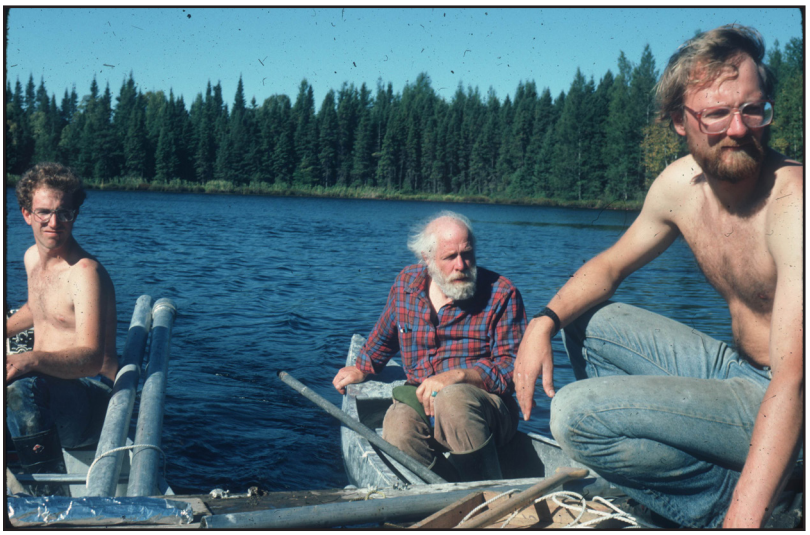

Figure 1. Dr. Herb Wright (center) and colleagues heading towards a sediment coring point in one of the lakes in the Boundary Waters Canoe Area of Minnesota during the early1980s. Photo credit: Dr. Svante Björck (http://www.geol.lu.se/personal/seb/).

Figure 2. Dr. Bud Heinselman standing next to a 1595 fire origin red pine on Three Mile Island in Seagull Lake, Boundary Waters Canoe Area, Minnesota, during the fall of 1991. Photo credit: Kevin Proescholdt, Wilderness Watch.

[1] http://www.msthalloffame.org/herbert_e_wright.htm

I can still recall one delightful evening a little more than a year later, having dinner with Bud and Dr. Edward V. Komarek Sr. of Tall Timbers Research Station, on the occasion of the conference on *The Role of Fire in Northern Circumpolar Ecosystems* held in Fredericton, New Brunswick. Bud and I kept in contact by mail and phone for many years thereafter. It was indeed a privilege to have personally known him.

The dedication that both Wright and Heinselman have shown in their professions is without question all-inspiring. It is my belief that their paper reproduced here in the pages of *Fire Ecology* should serve as an endearing reminder of their individual and combined legacies in the world of fire ecology.

Thanks are extended to Dr. Lee E. Frelich of the University of Minnesota Center for Forest Ecology, and Kevin Proescholdt of Wilderness Watch for their assistance in the preparation of this introduction.

LITERATURE CITED

Alexander, M.E., and D.L. Euler. 1981. Ecological role of fire in the uncut boreal mixedwood forest. Pages 42−64 in: proceedings of a symposium on boreal mixedwood forests. Environment Canada, Canadian Forestry Service COJFRC Symposium Proceedings O-P-9, Great Lakes Forest Research Centre, Sault Ste. Marie, Ontario, Canada.

Heinselman, M.L. 1978. Chapter 12: fire in wilderness ecosystems. Pages 248–278 in: J.C. Hendee, G.H. Stankey, and R.C. Lucas, editors. Wilderness management. USDA Forest Service Miscellaneous Publication No. 1365, Washington, D.C., USA.

Heinselman, M.L. 1996. The Boundary Waters wilderness ecosystem. University of Minnesota, Minneapolis, USA.

Lynham, T.J., M.E. Alexander, D.M. Morris, and J.L. Kantor. 2002. Ecological effects of forest fires in the boreal and Great Lakes-St. Lawrence forest regions of Ontario: a partially annotated bibliography. Natural Resources Canada, Canadian Forest Service Information Report GLC-X-6, Great Lakes Forestry Centre, Sault Ste. Marie, Ontario, Canada.

Proescholdt, K. 2014. First fight: Bud Heinselman and the Boundary Waters Canoe Area. Minnesota History 64(2): 70–84.

Proescholdt, K., R. Rapson, and M.L. Heinselman. 1995. Troubled waters: the fight for the Boundary Waters Canoe Area Wilderness. North Star Press, St. Cloud, Minnesota, USA.

Wade, D., J. Ewel, and R. Hofstetter. 1980. Fire in south Florida ecosystems. USDA Forest Service General Technical Report SE-17, Southeastern Forest Experiment Station, Asheville, North Carolina, USA.

Wright, H.E. 2010. High points in paleolimnological studies as viewed by a convert. Journal of Paleolimnology 44: 497–503. doi: 10.1007/s10933-010-9431-7

Wright, H.E., Jr., and M.L. Heinselman. 1973. The ecological role of fire in natural conifer forests of western and northern North America—introduction. Quaternary Research 3: 319–328. doi: 10.1016/0033-5894(73)90001-X