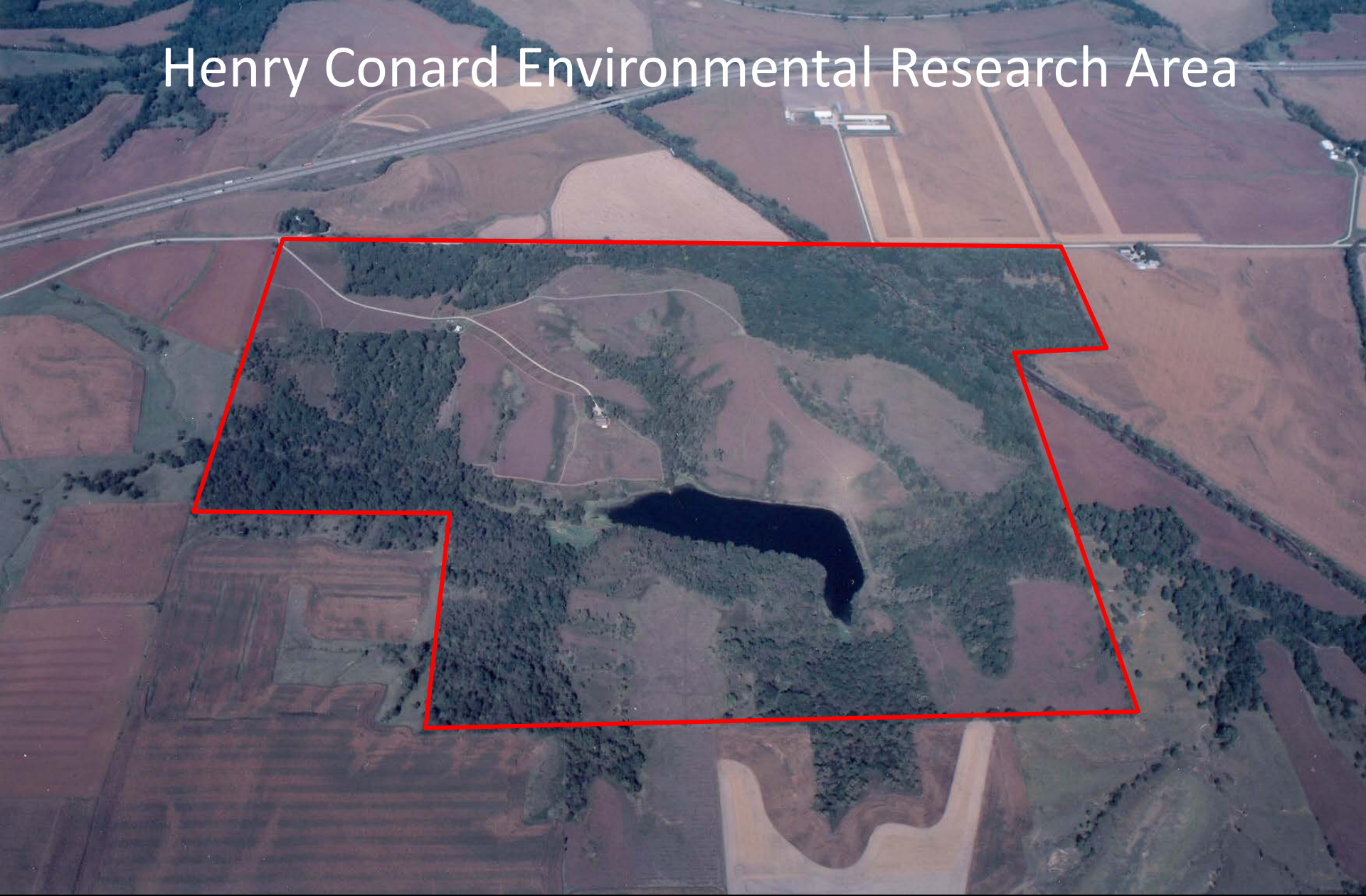


Henry Conard Environmental Research Area



CERA's Mission

Our mission is to preserve and, through restoration, recreate a part of Iowa's vanishing natural heritage, providing a resource for the entire college, local schools, environmental groups, clubs, and the general public.



Henry Conard Environmental Research Area



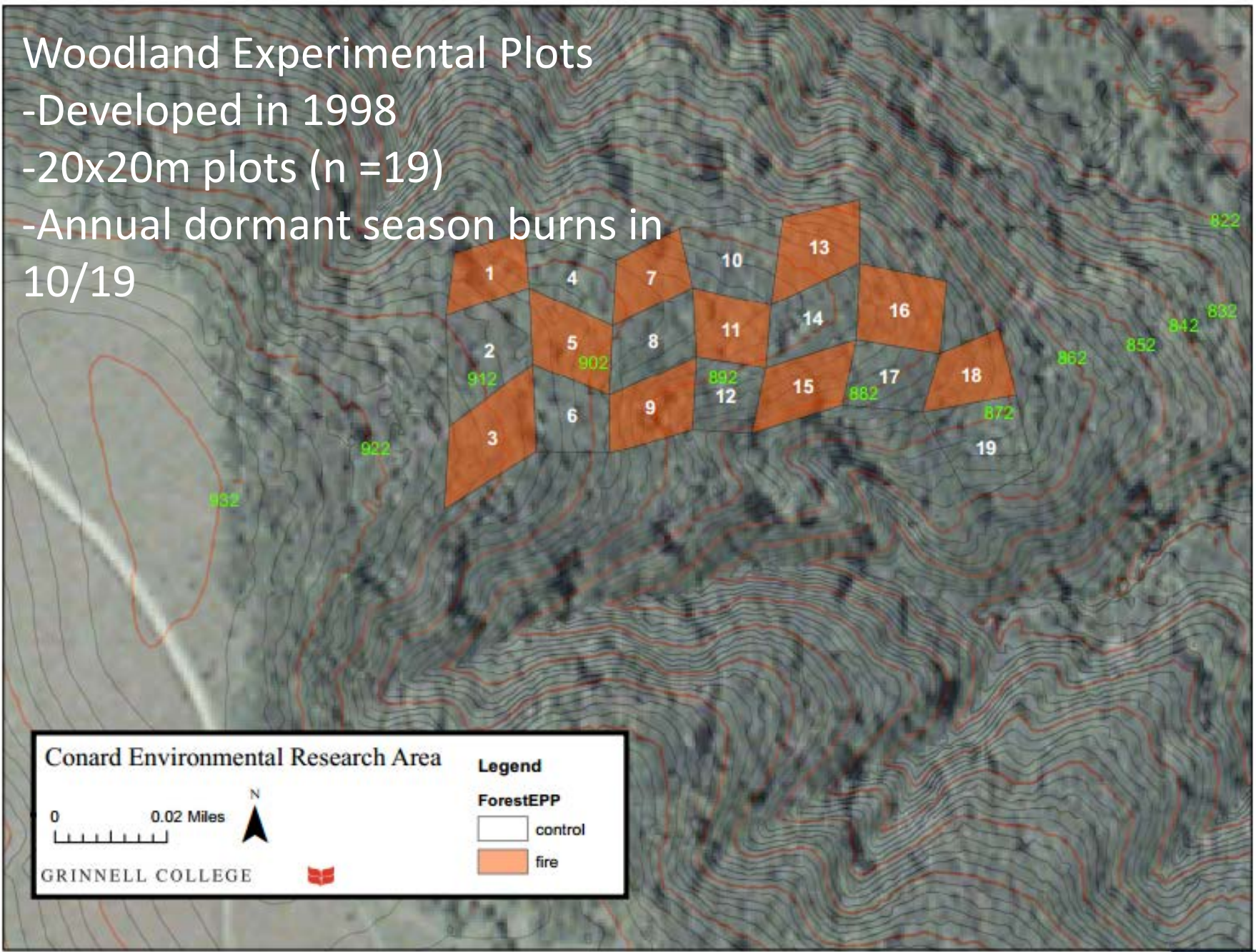
1967



2013

Woodland Experimental Plots

- Developed in 1998
- 20x20m plots (n =19)
- Annual dormant season burns in 10/19



Conard Environmental Research Area

0 0.02 Miles

GRINNELL COLLEGE

Legend

ForestEPP

- control
- fire

Experimental Prairie Plots

- Seeded with native WS grasses in 1987
- Seeded with native forbs in 1990.
- In 1998, experimental array developed.

Environmental
Education
Center

Burn/Mow Plots

Seasonal Burn Plots

Experimental Prairie Plots
Conard Environmental Research Area



Experimental Prairie Plots



Oak leaf litter fauna: Acari, Coleoptera, Diptera, Nematodes, Collembola

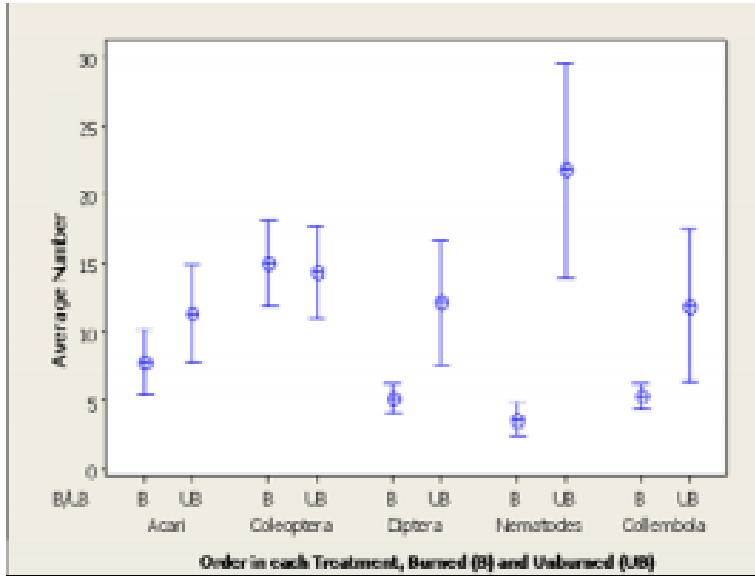


Figure 2. Difference in average number of litter animals from each identified order between burned and unburned plots. Bars are one standard error from the mean. $n=19$ (* means $p < .05$).

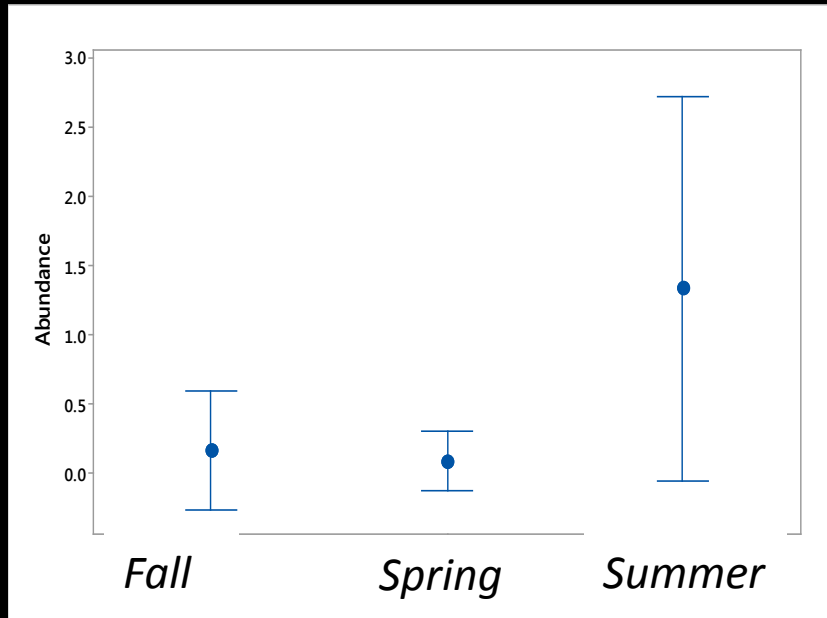


Soil/litter collected and run through Burlese Funnels from woodland burn plots in September/October 2009

Average number of litter fauna per square meter was slightly lower in burned plots, but it was not a significant difference. Our results also show that most orders did not vary significantly in number of individuals between treatments. With the exception of spiders, orders tended to have fewer individuals in the burned plots. Only ants showed significantly lower numbers in the burned plots, but Hemiptera and nematodes showed marginally non-significant trends in this direction.

Chauliognathus pensylvanicus – Goldenrod Soldier Beetle

- Pollinator of the native prairie plant *Solidago* spp.
- Role in soil nutrient cycling
- Activity (including mating) peaks in the summer



Sampling: sweep-netting within seasonal burn plots during September, 2014

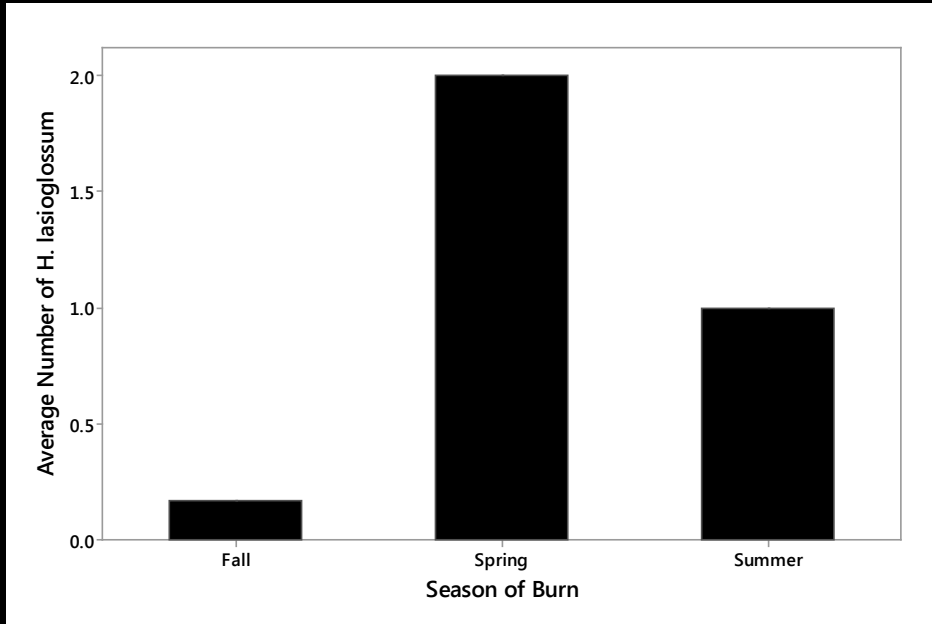
Fig 2. Effects of Burn Season on Abundance of Goldenrod Soldier Beetles
Fire season has a significant effect on abundance of goldenrod soldier beetle ($F=4.45$, $p=0.030$). Summer burn plots show the highest abundance but also the highest variability.

Lasioglossum spp. (Apoidea: Halictidae) : Halictid (Sweat) Bees

-Important pollinators of native forbs



Sampling: pan trapping within seasonal burn plots during August/September 2014



Bee abundance was greatest in plots annually burned during the spring and lowest in plots annually burned during the fall.

Oecanthus nigricornis: Black horned tree cricket



Sampling: sweep netting in seasonal burn plots during August/September 2014

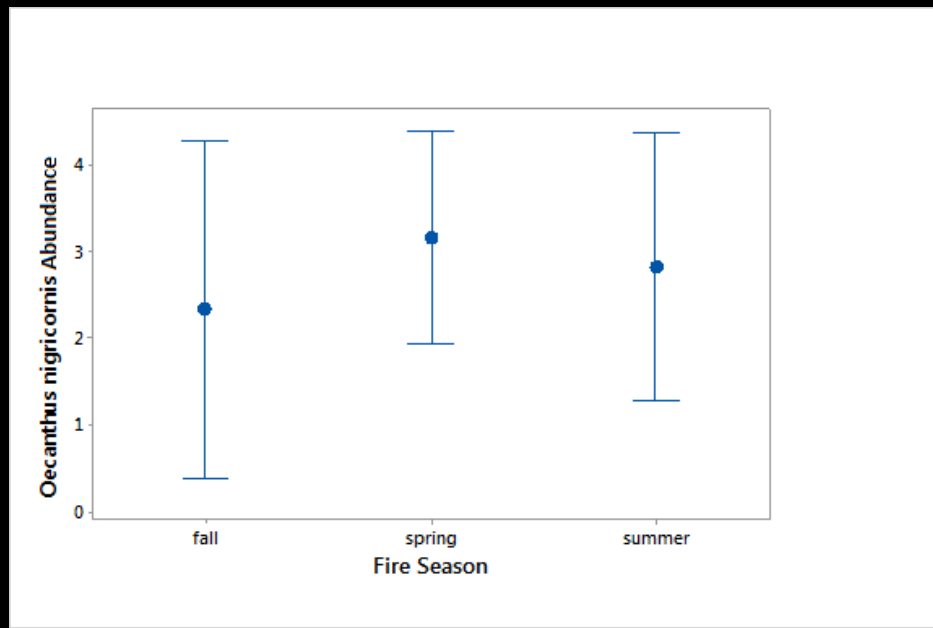


Figure 1. Abundance of *O. nigricornis* in response to burns conducted in different seasons. Fire season is shown to have little impact on the abundance of *O. nigricornis* ($p=0.669$, $f= 0.42$).