

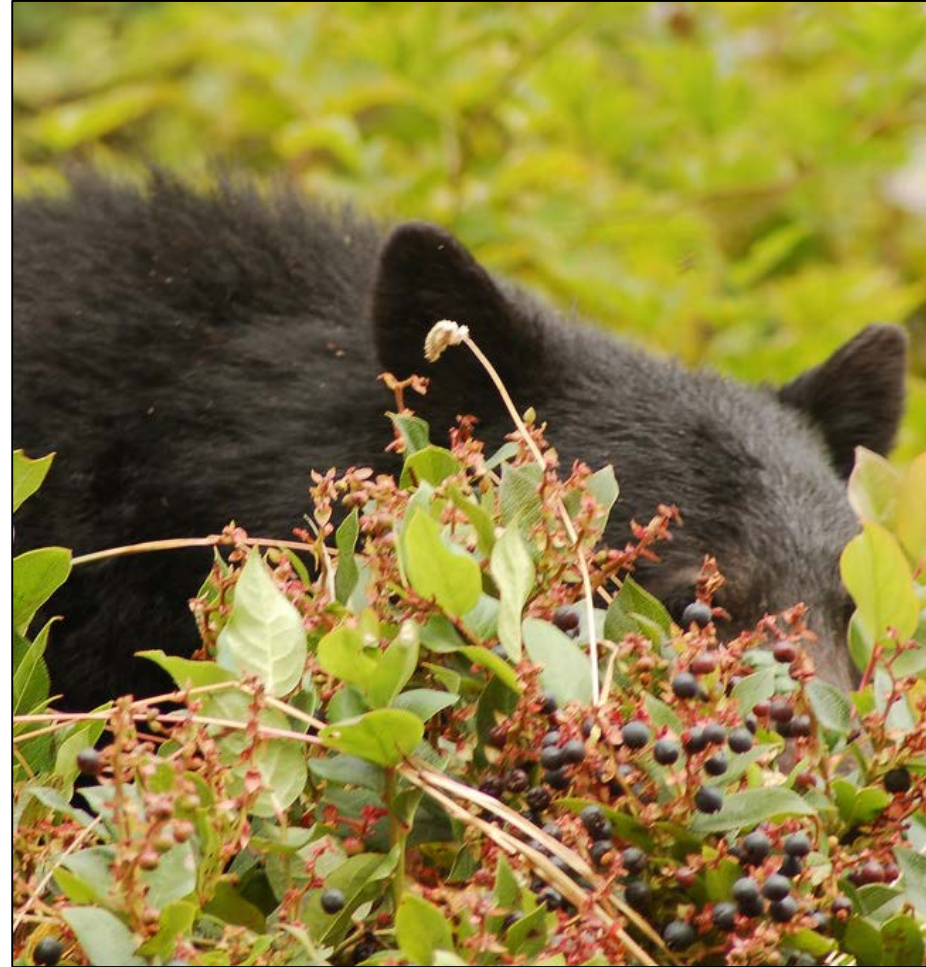
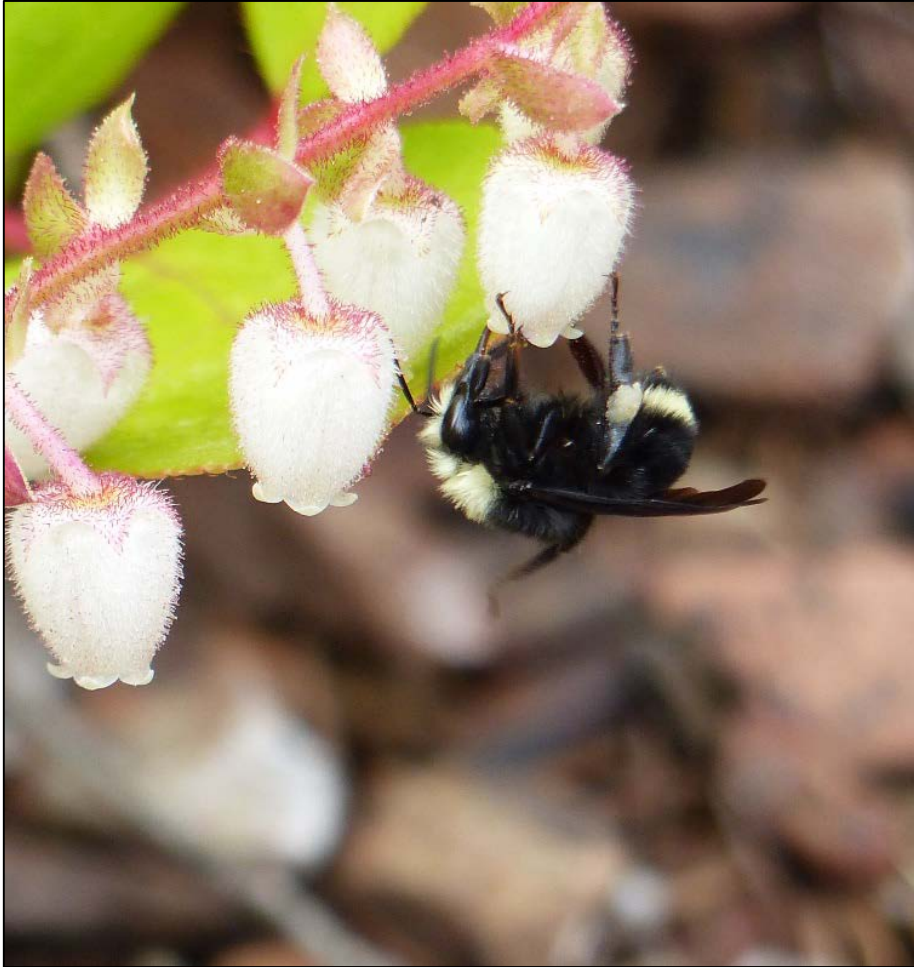
The effects of fire severity on native bees in mixed conifer forest

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Animal pollinators play an essential role in forest ecosystems

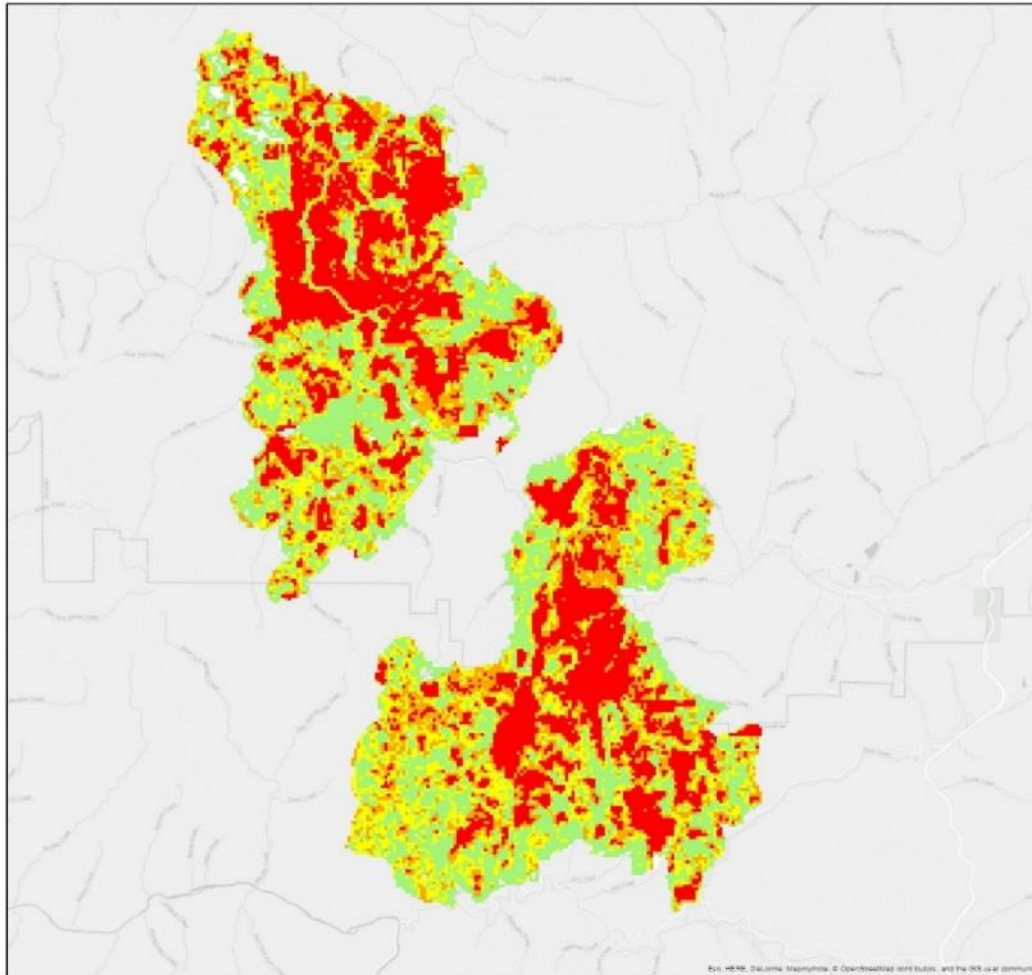


Little known about native bees in dynamic forest ecosystems

How does fire severity influence native bee communities in mixed-conifer forest?

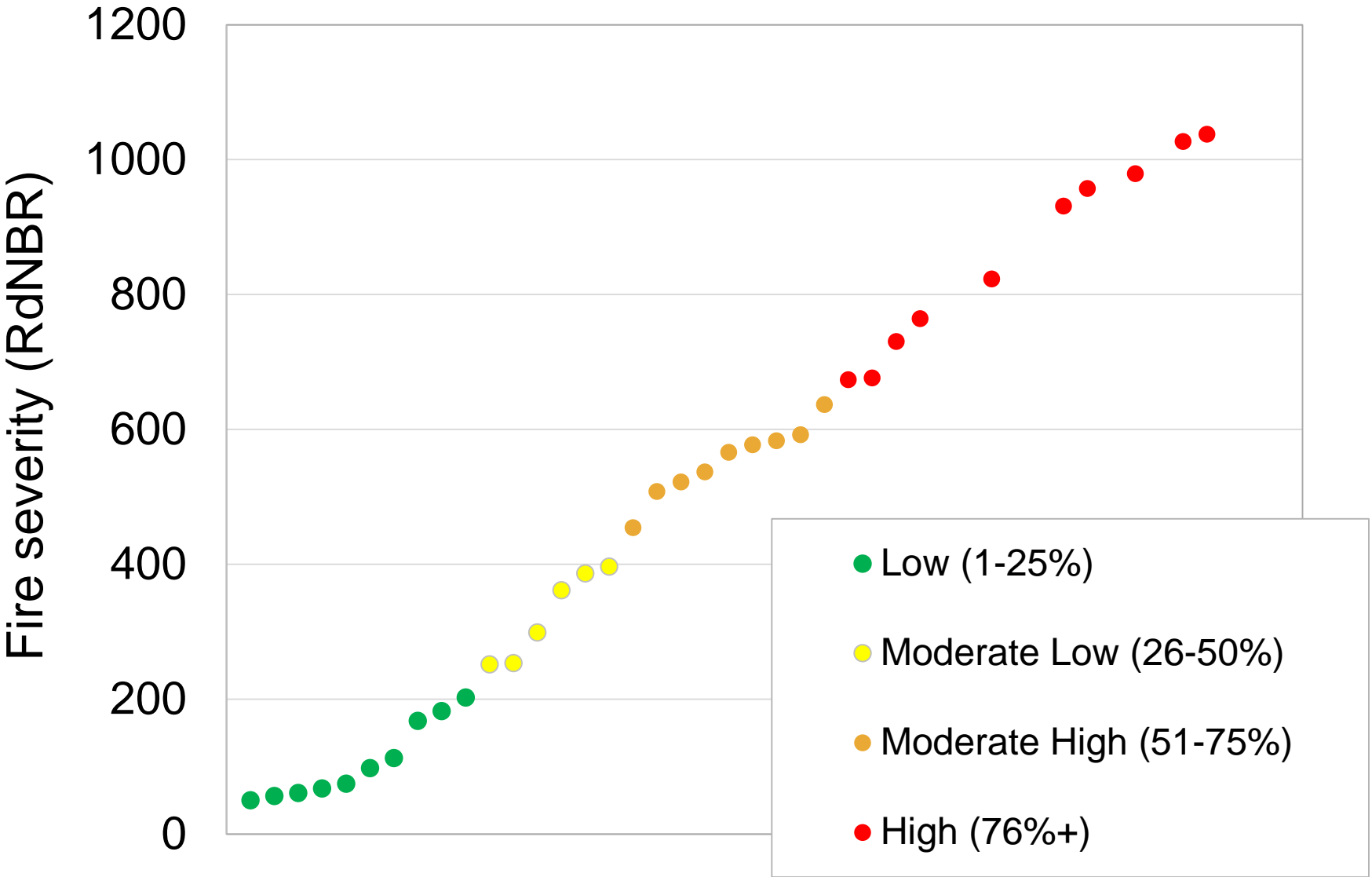


Study took place in Southwestern Oregon where the Douglas Complex fire burned in 2013



0 62.5 125 250 375 500 Miles

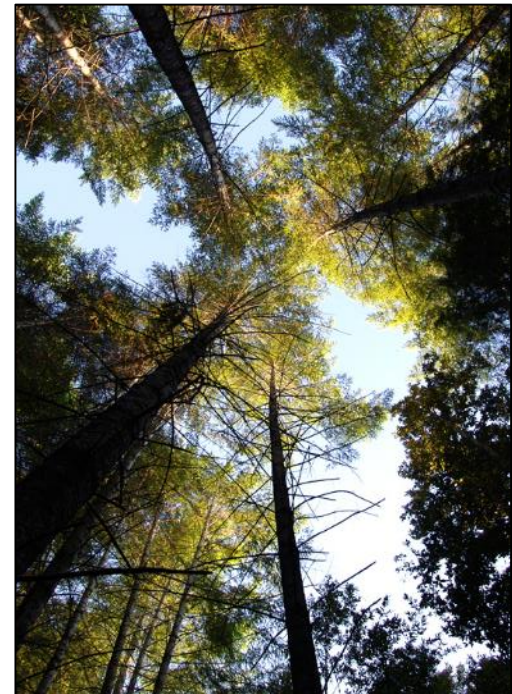
Selected 35 stands spanning fire severity gradient



Sampled bee communities and habitat variables during spring/summer 2016 and 2017



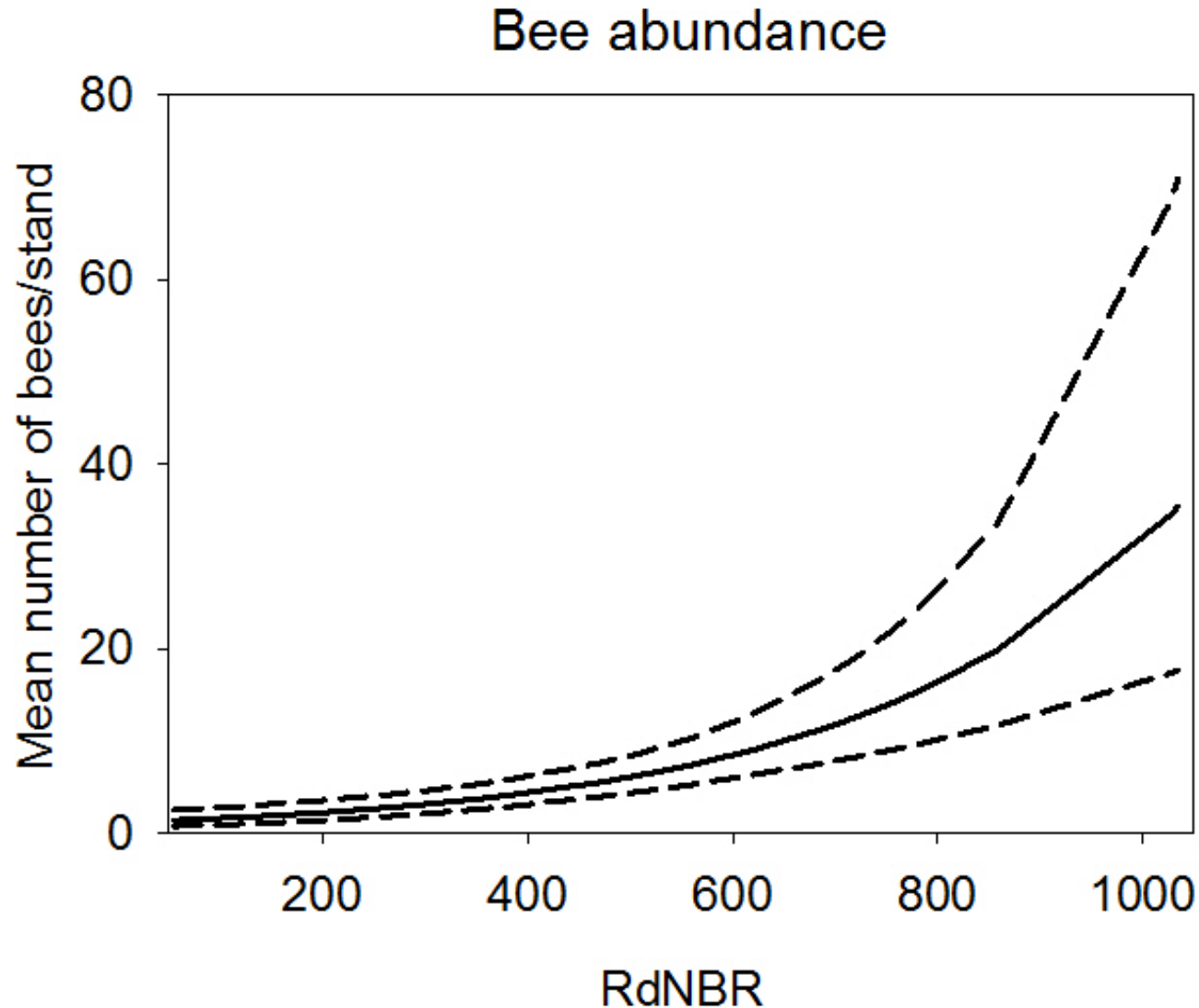
**Four sampling periods/year:
May-September 2016
May-September 2017**



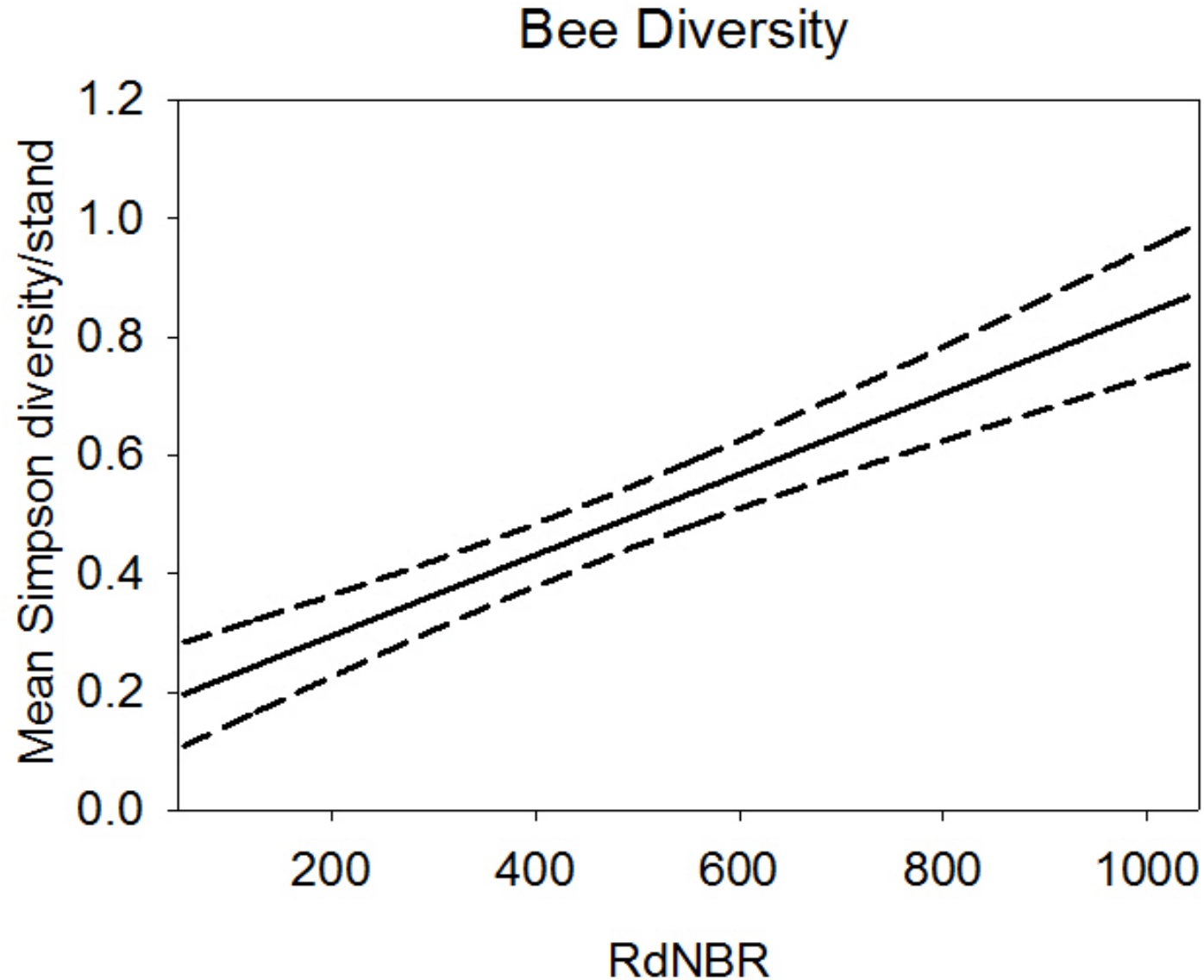
Collected 5,170 bees representing 26 genera and 109 morphospecies



The number of bees collected per stand increased with fire severity



The number of bee species collected per stand also increased with fire severity

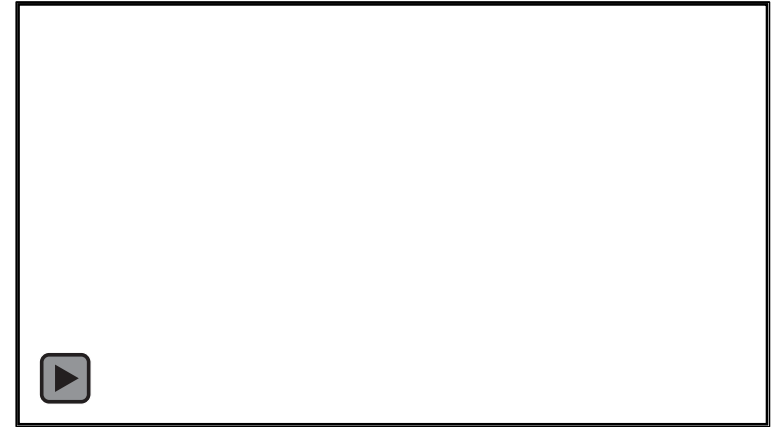


Canopy cover decreased and flowering plant density increased with fire severity



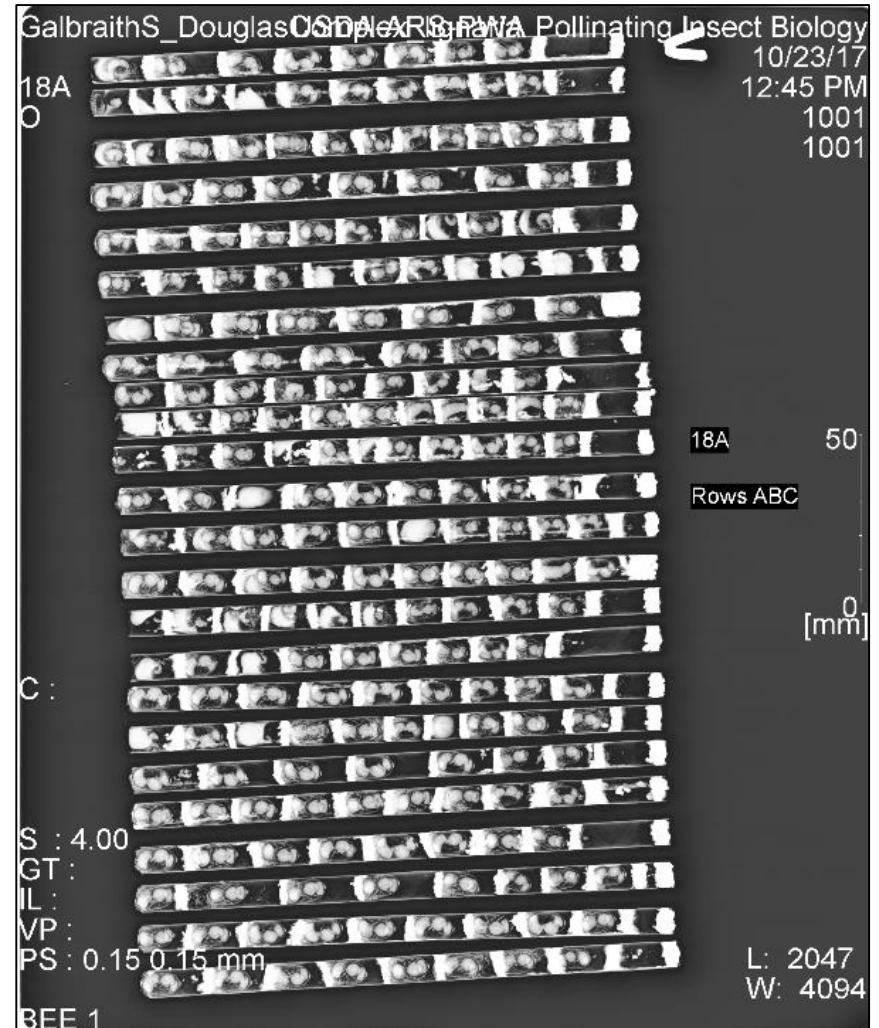
How is bee reproductive output influenced by fire severity?

20 female, 25 male cocoons



2 blocks/stand

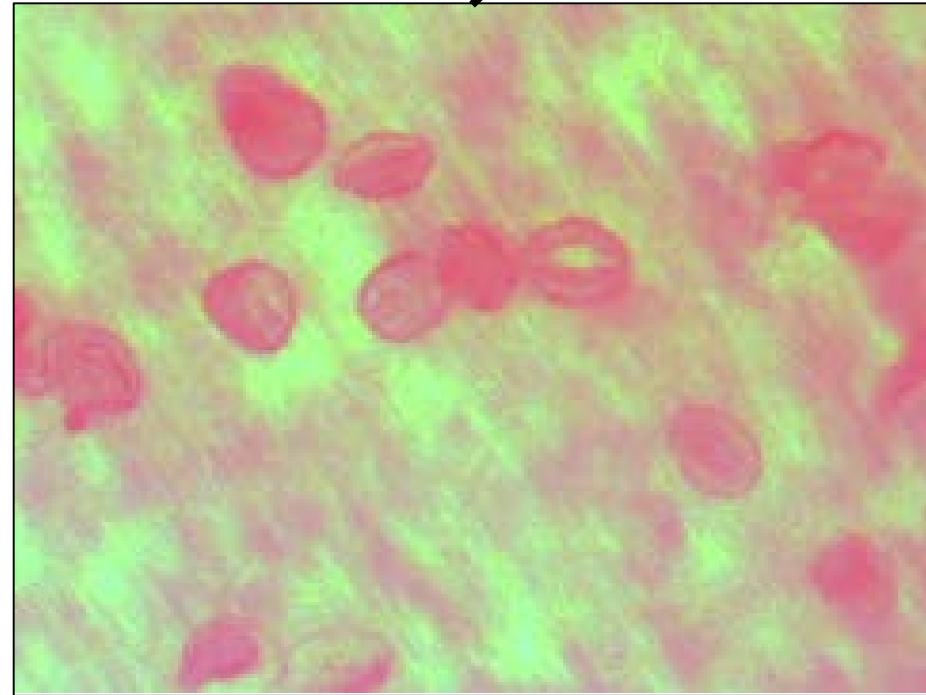
X-rayed blocks in the fall to assess number of successful offspring, sex ratio



Nests had more offspring and females when fire severity was higher within 1000m from nest block

Nesting block nearly filled with offspring

Pollen grains sampled from nest block



In summary....

- The number of bees and number of bee species increases with fire severity
- Reproductive output of a native bee increases with fire severity within 1km of the nest



Many thanks to...

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Bees are some of the most important pollinators,



Photos: Lisa Zander, Sharp
Photography

Study location: Mixed-conifer forest in Southwestern Oregon (Klamath Mountains)





Photo by Thomas Shahan



Oregon
Department
of Agriculture