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Comments: Prescribed burn study finds negative impacts on salamander populations

"Prescribed fire and timber harvest are anthropogenic disturbances that modify resource availability and ecosystem structure, and can affect wildlife both directly and indirectly. Terrestrial salamanders are effective indicators of forest health due to their high abundance and sensitivity to microclimatic conditions. Given their ecological importance, it is critical to understand how forest salamanders respond to management-related disturbances. "

"The biggest result of our study is that we saw differences in captures," or the number of salamanders in a given area, O'Donnell said. "The captures decreased in all three treatments relative to the untreated areas."

There were four kinds of ecosystems they looked at - freshly burned areas, areas that had been cleared from oaks and other big shelter trees, areas in which herbicide had been used to kill small or medium trees while leaving the largest ones intact, and areas that hadn't been burned or cleared.

In the burn areas, the researchers found that the leaf litter that salamanders spend most of their time buried under dropped a lot, affecting the way the amphibians used their habitat. The leaf litter on the ground rebounded after a year, but O'Donnell said it didn't have the same quality of decomposition as before burning. "It didn't retain moisture as well," she said, and the team didn't find as many salamanders in the leaf litter as frequently. Instead, they tended to shelter under large cover objects like rocks or logs.

The USFS needs to halt all prescribed burning operations to prevent further population degradation and potential species loss of the animal and insect community that inhabits the forest floor.

Prescribed fire and timber harvest effects on terrestrial salamander abundance, detectability, and microhabitat use Katherine M. O'Donnell, Frank R. Thompson III, Raymond D. Semlitsch

https://www.researchgate.net/publication/275218576_Prescribed_fire_and_timber_harvest_effects_on_terrestrial_salamander_abundance_detectability_and_microhabitat_use