Fire Ecology Chats: A Podcast Series by the Association for Fire Ecology

Transcript of Episode 17 - Prescribed fire limits wildfire severity without altering ecological importance for birds

Host: Robert Keane (Editor of Fire Ecology and Retired Research Ecologist, USDA Forest Service, USA)

Guests: Quresh S. Latif, Victoria A. Saab and Jonathan G. Dudley

Link to Full Article in Fire Ecology: https://fireecology.springeropen.com/articles/10.1186/s42408-021-00123-2

Bob Keane: Good morning everybody. My name is Bob Keane. I'm the editor of the journal Fire Ecology, a journal that is managed by AFE and SpringerNature is the publisher. Today we're going to be talking about a very interesting paper that has to do with prescribed fire, wildfire, and its impacts on birds. I'd like to introduce Quresh Latif, Vicki Saab, and Jonathan Dudley to our program today to talk about the paper *Prescribed fire limits wildfire severity without altering ecological importance for birds*. Quresh, could you please introduce yourself and your affiliation?

Quresh Latif: Sure, my name is Quresh Latif. I currently working for Bird Conservancy of the Rockies. When doing the work for this paper, I was working with Vicki at Rocky Mountain Research Station. And I consider myself a quantitative ecologist, with mostly experience with birds.

Bob Keane: And Vicki.

Vicki Saab: Hi, my name's Vicki Saab. I'm a semi-retired Research Ecologist. I work with Rocky Mountain Research Station for over 30 years and studied the bird demographics in relation to large scale disturbances of wildfire, land management, bark beetle outbreaks.

Bob Keane: Last John.

John Dudley: Yeah. Hi, I'm John Dudley, and I'm an ecologist with the Rocky Mountain Research Station located in Boise, Idaho. And my role with this project was to oversee field operations and data management.

Bob Keane: Thank you all three. Let's dive right into the paper. Quresh, can you tell us about this paper in general?

Quresh Latif: Yeah, this paper started out with a study at the Payette National Forest looking at the effects of prescribed fire where there were some study units laid out and surveys done before and after prescribed fire. And fortuitously wildfire came along several years after the prescribed fires. So that allowed us the opportunity to look at the serial effects of prescribed fire and wildfire. And also that allowed us to compare responses to wildfire in places that had previously been treated by prescribed fire or not. And interestingly, the birds responded to wildfires similarly in both those contexts.

Bob Keane: It's incredibly opportunistic to jump on wildfire after prescribed fires burned. Vicki, tell us what types of birds you were looking at in these areas.

Vicki Saab: We studied small land bird communities of songbirds and woodpeckers. And we had predictions about how different species would respond to both prescribed fire and wildfire, based on their life history characteristics. And, as predicted several of the woodpecker species, cavity nesters and aerial insectivores, they responded positively to wildfire. Whereas the canopy-nesting, foliage-gleaning species had more of a negative response. And interestingly, the wildfire affected more species more consistently than did the prescribed fire. So even though the prescribed fire reduced the high severity fire, those same species that respond positively after wildfire, were still responding positively.

Bob Keane: John, what are the primary differences between the prescribed fire and wildfire as far as bird habitat is concerned?

John Dudley: Well, I think partly it would be as you would expect, the prescribed fire did not have the same intensity as wildfire and occurred before the wildfire. So you can imagine, you know, a patchy effect across the hill slope for the prescribed burning so a variable severity effect in the end. Then picture a wildfire, stand replacing in places and mixed severity with high mortality—tree mortality, shrub mortality.

Bob Keane: Okay, yeah, that might explain some differences. So Quresh, you mentioned that they were a prescribed fire and wildfire and they were was a place where wildfire and prescribed fire both happened. Were the bird responses the same in those three cases or just two?

Quresh Latif: So responses to prescribed fire were pretty muted. There weren't, there were only two species that responded in a statistically supported level to prescribed fire. So prescribed fire effects in other studies, they can be stronger, but really the prescribed fire, even though it wasn't a big response by birds, it did limit the severity of the subsequent wildfire. And so really, the paper's focused on comparing wildfire with wildfire responses rather than to prescribed fire. We kind of know that prescribed fire and wildfire are different. So there isn't a big focus on comparing the responses to those two different types of fire. It's more about comparing the response to wildfire in the situation where the area had been previously treated by prescribed fire or not.

Bob Keane: I see. So Vicki, what do you think this means overall to land management? Does this mean that fuel treatments can achieve what wildfire does? Or do we have to manage with kind of both of them on the landscape?

Vicki Saab: Prescribed fire is not a substitute for wildfire. However, if the goal is to reduce fuels with prescribed fire, and then it subsequently burns by wildfire, we can still see this similar species responding in a similar way after the wildfire. So it's a win-win situation where the prescribed fire treatments can reduce fuels and reduce severity, while at the same time still provide the habitat for those wildfire associated species—in particular, several woodpecker species and aerial insectivores.

Bob Keane: Very interesting. So John, what do you think, were there any mechanical treatments that were tied to the prescribed fire? Or was it just a prescribed fire?

John Dudley: There were no mechanical treatments. The topography of the study area is, you know, fairly remote and hasn't lent itself well to mechanical treatments.

Bob Keane: And was the prescribed fire, as far as prescribed fires go, you know, did they burn it when it was kind of moist? Or did they burn it under dry conditions?

John Dudley: Prescribed fires in general can be very challenging to do in the spring. And as I recall, there were variable effects where they did have greater results at reducing the fuels. I want to say that it was successful as far as fire managers were concerned. And I think it achieved, you know, the objectives that they wanted.

Quresh Latif: Yeah, I would add to that, that you know, the severity of the prescribed fire, as measured was pretty low compared to prescribed fire in other places. But despite that, it was clear that the wildfire severity in the places that have been treated was limited. So from that perspective, yeah, their objectives were achieved, they had limited the severity of subsequent wildfire.

Bob Keane: Well, this paper certainly has important implications for fire management in the West. And I want to thank all you three for coming on our podcasts and telling everyone about this paper. Quresh, would you like to recognize any funding agencies. Vicki or John, feel free to chime in, would you'd like to acknowledge anyone?

Vicki Saab: Yeah, this project was initially funded through the Joint Fire Science Program early in the 2000s. And we also received funding through the National Fire Program and from the Payette National Forest.

John Dudley: I would add as well that we had dozens of field crew members that contributed a lot of hard work to collect these data. And we're really grateful for what they contributed.

Bob Keane: Thank you very much. I really appreciate it. contributing to our journal and please, everyone, go to our website, download this important paper and read it. Thank you everyone, and thank you Quresh, Vicki, and John.

Vicki Saab, John Dudley, Quresh Latif: Thank you.