# Potential longitudinal shifts in density and size of Coastal Cutthroat Trout after the Lookout Creek wildfire, Oregon

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Recent increases in the severity and extent of wildfires in the American West has prompted increased attention to better understand post-fire impacts on streams and rivers. Existing research has predominantly focused on the physical changes of stream habitats, such as the warming of water and the pulsed delivery of wood, sediments, and nutrients downstream. Yet, our understanding of the ecosystem-level related responses to fire remains limited, particularly within broader spatial contexts. Here, we will examine spatial patterns of size and abundance of Coastal Cutthroat Trout along several kilometers of the mainstem of Lookout Creek, Oregon during pre-fire conditions and develop competing hypotheses to evaluate potential postfire responses. Our hypotheses are rooted in ecological theory and consider links between community composition and surrounding landscapes as predictable from headwaters to downstream. Yet, habitat patchiness and heterogeneity set the context for these ecological processes. In addition, watershed and landscape-level processes can interact with channel geomorphology resulting in differential quality of stream habitats and thus, regulate the variation of aquatic communities. This work will help guide the development of further hypotheses concerning long-term trajectories of stream ecosystems after wildfires.