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After the fire: biodiversity of fungal endophytes in germinating Table Mountain Pine seedlings (Pinus pungens)

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ABSTRACTS - Oral Presentations

After the fire: biodiversity of fungal endophytes in germinating Table Mountain Pine seedlings (*Pinus pungens)*

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Following the November 2016 wildfires in the GSMNP, Table Mountain Pine (*Pinus pungens*) seedlings were observed germinating in three high burn areas (Cove Mt., Baskins Creek, and Two Mile Lead). Needles were sampled from both the bottom and tops of pine saplings. Needles were sterilized using sterilization techniques from U'Ren et al. then cultured on malt extract-agar (MEA) medium. Fungal endophytes growing from the needles were subcultured to clean MEA plates. DNAs were extracted from cultures and the internal transcribed spacer (ITS) region was sequenced. In all, 200 endophyte cultures were isolated and sequenced (Cove Mt., 89; Baskins Creek, 54; Two Mile Lead, 57) producing 58 unique genotypes (Cove Mt., 34; Baskins Creek, 26; Two Mile Lead, 20). Following the general trend of endophyte inoculation, the needles at the bottom had a higher culture success rate and overall diversity when compared to those sampled from the tops of the saplings. The most abundant taxa recovered were *Alternaria, Cladosporium, Diplogelasinospora, Epiccocum, Xylaria,* and *Sphaerosporella.* Only 6 genotypes were found across all three sites, with an additional nine genotypes shared across two of the three sites (Cove Mt. + Baskins Creek, Cove Mt. + Two Mile Lead). The high biodiversity across all three sites demonstrates the ability of pine to serve as a host for a broad scope of fungal endophytes.