A Potential Management Strategy for the Endangered Southwestern Willow Flycatcher: Effects of Early Season Wildfire on Foraging and Nesting Habitat

Rocha, Tayler

The objective of this study is to understand the effects of wildfire on Southwestern willow flycatcher (SWFL) habitat and behavior to determine if fire could potentially benefit the bird when properly applied. Vegetation measurements, insect abundance, biomass, and behavioral observations were collected in eight study plots (four burned sites, four control sites) on the McIntire Simpson property, a portion of which was burned by a runaway ditch fire in early spring, 2013. Forb and sedge species were higher (7 and 14 respectively) on the burned sites compared to the control, yielding additional flowering species such as dandelion and yellow banner, which may benefit SWFL by producing insects they prefer. Insects had higher abundance and biomass on the burn (200 individuals, 1 gram respectively). However, the orders of insects that represent the majority of SWFL diet (Hymenoptera, Coleoptera, and Diptera) substantially increased in both number and biomass in burned forb and willow (20 individuals and 50 mg, respectively). Although burned willow had increases in preferred SWFL insect types, at least two individual SWFL abandoned their territories early in the season, probably due to the loss of willow canopy (57.7% on abandoned OB1, compared to an average of 76.5% on occupied control sites). This indicates that SWFL are sensitive to drastic reductions in willow structure. Overall, this data shows that burning is beneficial when applied to forb habitat, but there is a limit to the amount of willow damage a SWFL will tolerate, leading to potential abandonment of territories and reduced nesting success in the area.

Awards Won: