A Symposium on Piñon-Juniper Status and Management for Wildlife

12-14 October 2016
Albuquerque, NM

Topics:

• current status of piñon-juniper habitats
• recent and predicted impacts of climate change
• wildlife habitat needs
• current management activities and relevance to wildlife
• information gaps

Sponsored by the New Mexico State BLM Office and Natural Heritage New Mexico (UNM Biology Department), with partners from the US Forest Service, US Fish and Wildlife Service, NM State Land Office, and The Nature Conservancy

Detailed information on the venue, costs, program available at http://nhnm.unm.edu/P-JSymposium
A Symposium on Piñon-Juniper Status and Management for Wildlife

- Current and Future State of Piñon-juniper Habitats
- Habitat Needs of Piñon-Juniper Wildlife
- Current management activities and relevance for wildlife
- Breakout Discussion Groups
- Field trip to Sandia and Manzano Mountains
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Current and Predicted State of Piñon-juniper Habitats

• P-J is not just one vegetation type: key variation in structure and disturbance dynamics – Bill Romme
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• The odd couple: mutual facilitation by piñon pines and ectomycorrhizal fungi - Catherine Gehring, Andrew Krohn, Chris Stultz, and Tom Whitham
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Habitat Needs of Piñon-Juniper Wildlife

• Elk, deer, and P-J: Needs, what works, and what doesn’t – Lou Bender
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• Ecology of Montezuma Quail in the Capitan Mountains of New Mexico – Ryan S. Luna, Elizabeth A. Oaster, Karlee D. Cork, Ryan O’Shaughnessy, Randy L. Howard, Scott P. Lerich, and Louis A. Harveson
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Current management activities and relevance for wildlife: goals, practices, and outcomes

• Effects of piñon-juniper woodland thinning on avian communities in the Arkansas River Valley, Colorado – Pat Magee
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- Tailoring management to the inherent variability of P-J vegetation – Bill Romme
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Elena Gallegos, piñon-juniper savanna

Otero Canyon, persistent piñon-juniper woodland
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Chamisoso Canyon, treated area

Treatment
What did we learn?
Three broad types of piñon-juniper vegetation

1. Persistent woodland
2. Wooded shrubland
3. Savanna

Must emphasize: much additional variation ... this is just a start at characterizing this diverse vegetation type!
Pinyon-Juniper woodlands

Pinyons are often the sole EMF host.

Pinyon loss \( \approx \) EMF loss

May impact future recruitment of seedlings or restoration efforts.

van der Heijden et al., 2015, New Phytologist
Pinyon Jay Habitat Management: Nest Scale

In piñon-juniper habitat, nest-scale habitat should include:

- tall piñon or Utah juniper trees
- large diameter piñon or Utah juniper trees
- high tree density
- high canopy cover
- healthy trees with dense foliage
Managing PJ for deer & elk

Take home points

1. Need is to enhance forage quantity & (especially) quality
   - Understory ≠ food
   - Small increases in preferred forage may have a big effect on diet quality

2. Provide increased nutrients = late-gestation & early-lactation
   - Broadcast burning in late-winter best option to date
   - Under previously thinned or lop-and-scatter treatments
   - Avoid piling and burning unless → seeded food plots
   - So called “natural” lightning-driven fire regime ≠ needed nutrient flush

3. Cool-season forages should be encouraged
   - Provide nutrition at optimal time especially in spring
   - Warm-season grazing may benefit
   - Forage plantings such as dryland alfalfa viable alternative
Management Considerations

While Gray Vireos occupy woodlands of varying density, height, and composition, they seem to prefer nesting around taller and denser trees within their territories.

Thus, pinyon-juniper management activities should strive to retain taller trees and denser stands similar to those documented in our study.
Effect of treatment on bird community summary

Species composition: similar
Species diversity: similar
Occupyancy: Negative treatment effect – woodland species
Positive treatment effect – open habitat species
Mixed treatment effects – Piñon jay
No treatment effect – Ubiquitous species

Abundance: Negative effect on PJ specialists and woodland obligates
Occupancy is a more conservative metric
1. PJ fuel treatments can reduce active crown fire hazard, but may impart undesirable effects on native species and ecological communities.

2. Across a wide range of sites and moisture scenarios, treatments may not be needed (especially given likely future drought-caused dieback).

3. For more ecologically friendly (and fire resistant) treatments:
   - Retain more trees (canopy cover ca. 15-50% probably sufficient, depending on objectives)
   - Raise canopy base height
   - Reduce surface fuels in treatments
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**Signup sheet to be notified when published**