Case Study: Integrating Bird Conservation and Wildfire Prevention in a Santa Fe Wildland Urban Interface

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Image: Jan-Willem Jansens

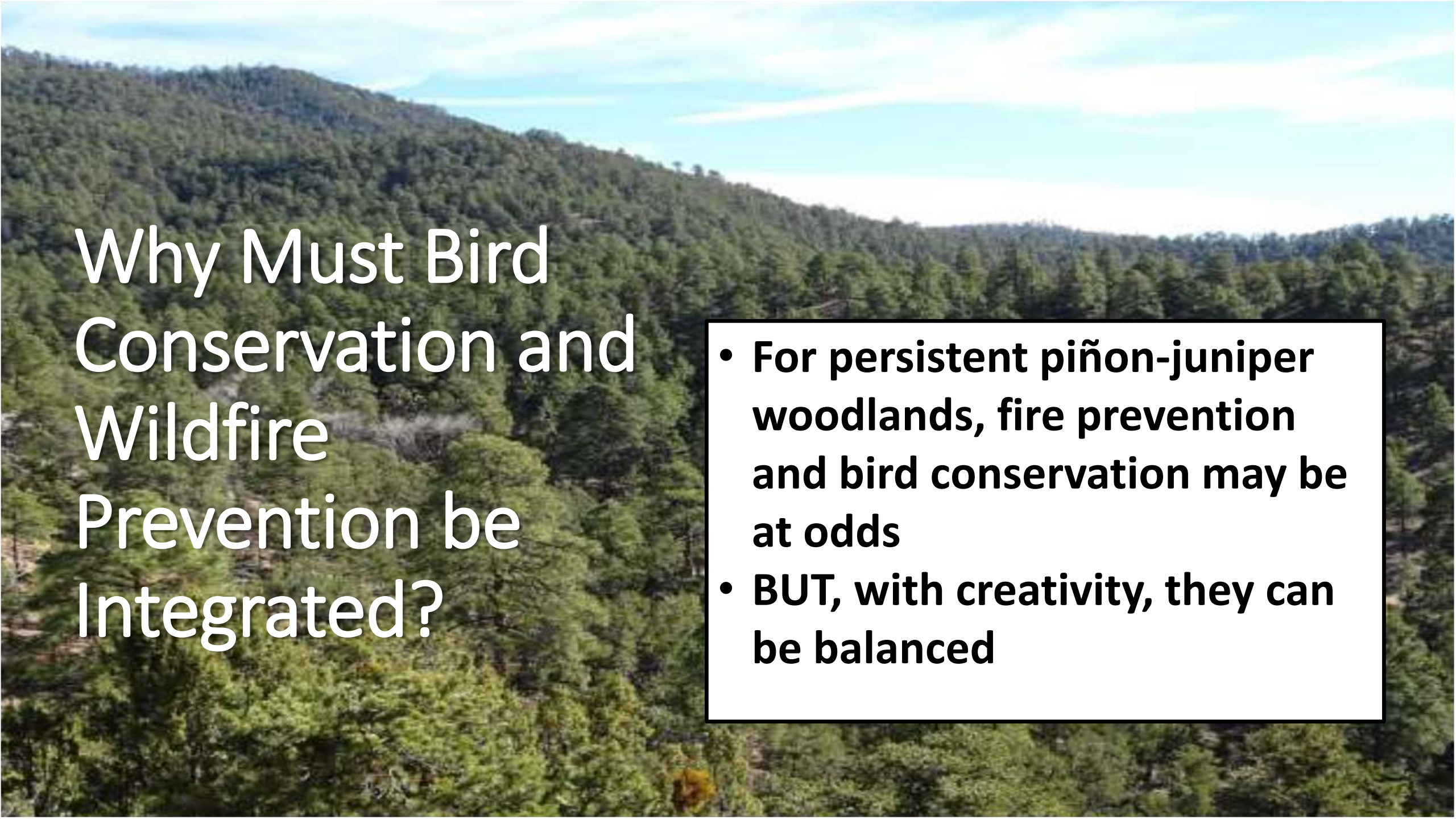
Why Must Bird Conservation and Wildfire Prevention be Integrated?

- **Several studies suggest the declining Grace's Warbler, as well as other bird species, benefit from ponderosa pine forest thinning that results in a patchy-clumpy mosaic, larger ponderosa pine, and a diverse understory of grasses and forbs**


Image: USFWS

- **The best available science suggests the declining Pinyon Jay, as well as numerous other bird species, may be negatively impacted by thinning in persistent piñon-juniper woodlands**
- **More research is needed, but caution regarding thinning in persistent piñon-juniper woodlands is recommended**
- **Available evidence suggests persistent piñon-juniper woodlands have always burned at high severity, meaning fire prevention, through thinning, is often desired by fire professionals, but may not always represent management that restores historical habitat conditions**

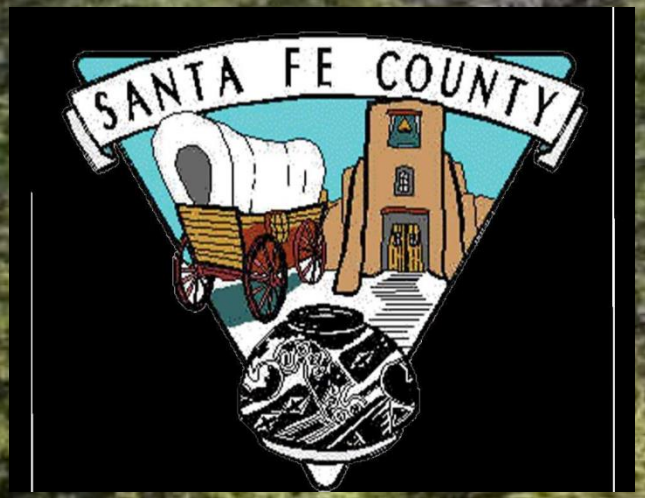
Why Must Bird Conservation and Wildfire Prevention be Integrated?



Why Must Bird Conservation and Wildfire Prevention be Integrated?

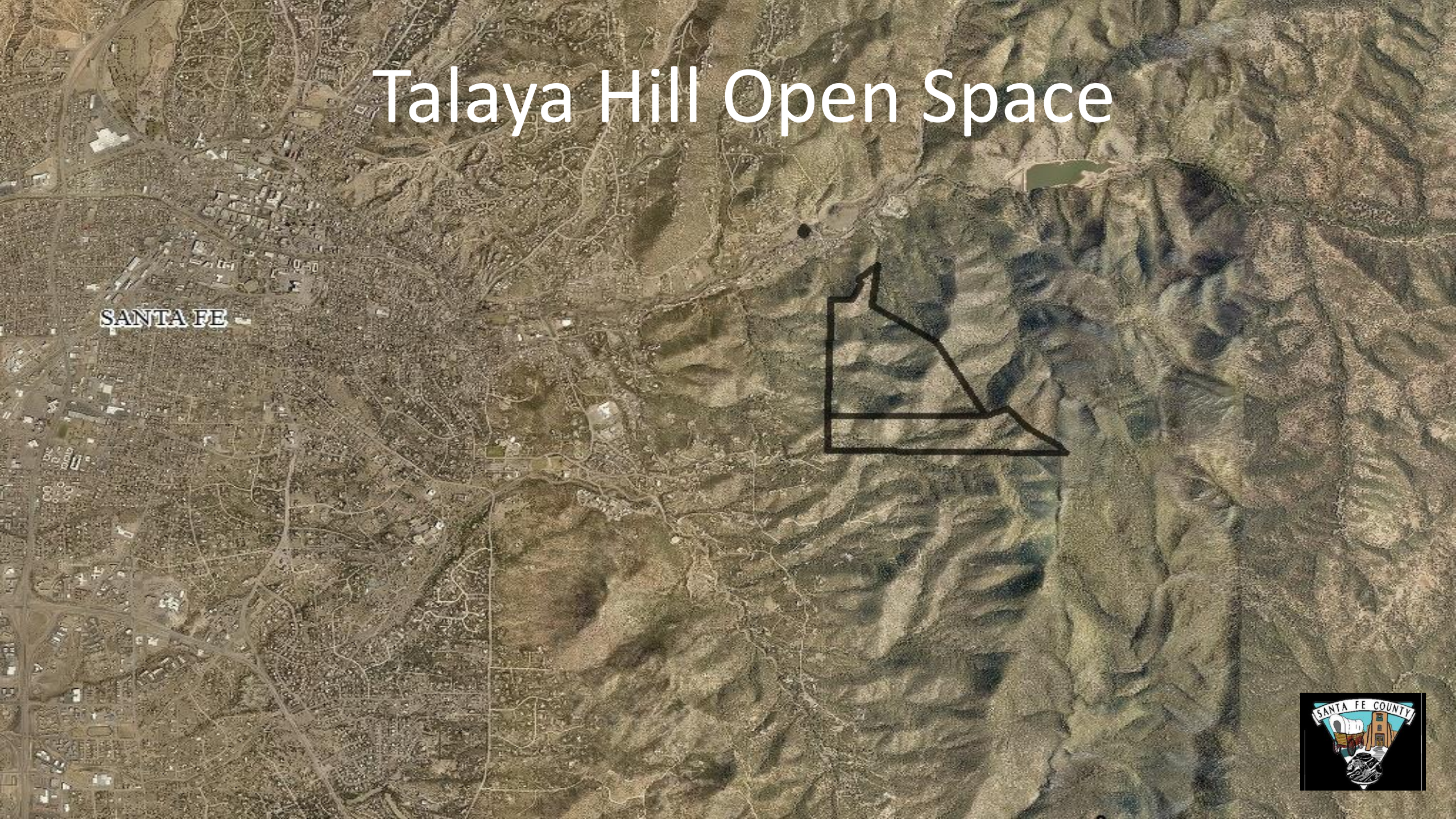
- **For persistent piñon-juniper woodlands, fire prevention and bird conservation may be at odds**
- **BUT, with creativity, they can be balanced**

Talaya Hill Open Space



- **Work at Talaya Hill Open Space is an example of how to balance bird conservation and wildfire prevention:**
  - **Talaya Hill Open Space is located in the Sangre de Cristo foothills on the eastern edge of Santa Fe**
  - **It has been identified as an important property to help prevent wildfire from negatively impacting the Santa Fe Watershed**
  - **Wildlife conservation is also a priority, and Pinyon Jay, Juniper Titmouse, Black-throated Gray Warbler, Woodhouse's Scrub-Jay, and other level one and two priority piñon-juniper bird species have been documented using persistent piñon-juniper woodlands on the property**

Talaya Hill Open Space

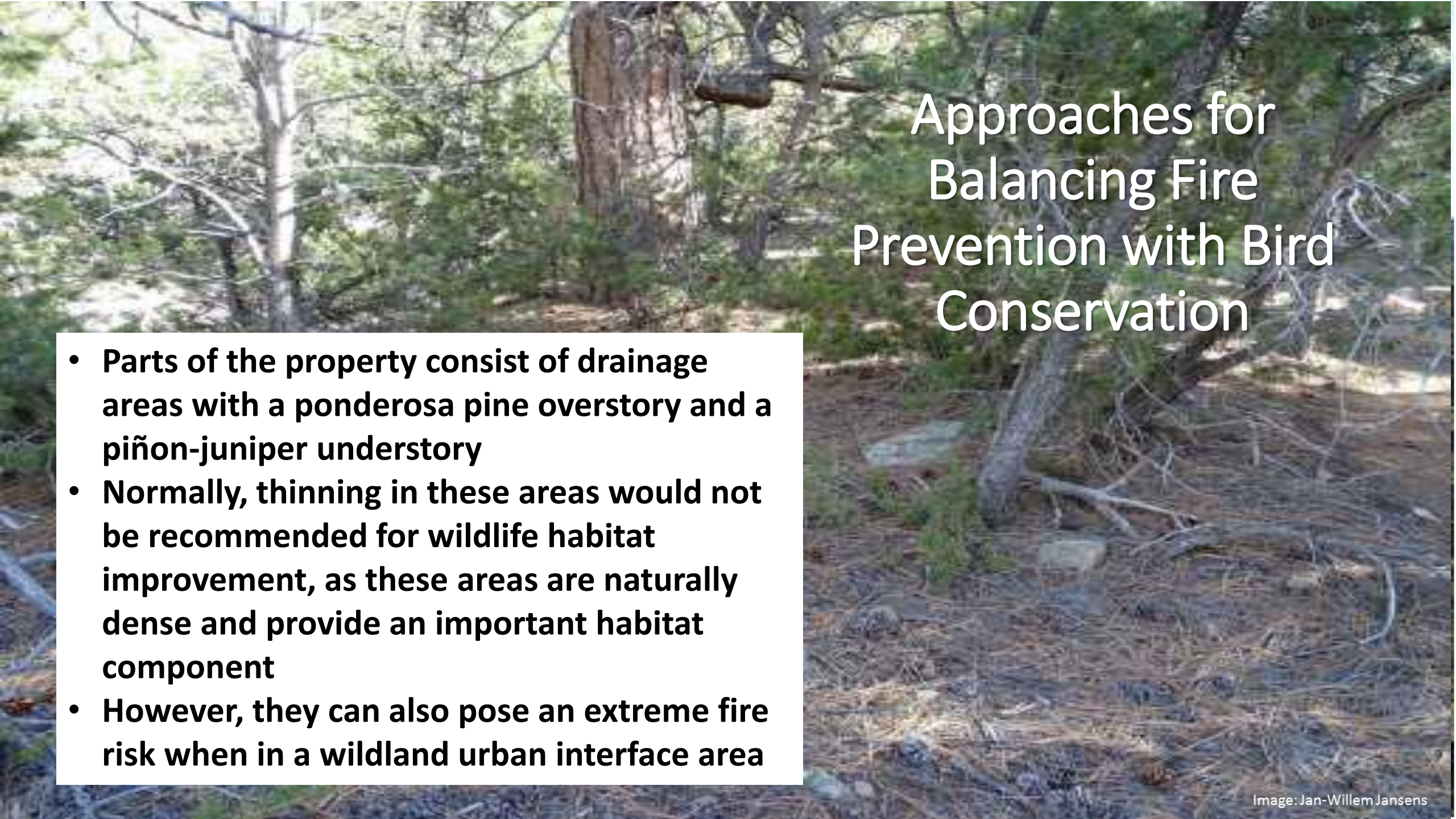


- **Parts of the property consisted of dense “dog hair” ponderosa pine forest**
- **Because science suggests thinning ponderosa pine will benefit priority bird species, such as Grace’s Warbler, these areas were thinned using ponderosa pine forest thinning best practices, including:**
  - **Creating a patchy-clumpy mosaic**
  - **Promoting larger ponderosa pines**
  - **Leaving Gambel oak**
  - **Avoiding thinning on steep slopes (>50%)**
  - **Using lop and scatter to prevent erosion and promote understory growth**
  - **Retaining snags**
  - **Avoiding limbing or pruning trees**

Approaches for Balancing Fire Prevention with Bird Conservation

Approaches for Balancing Fire Prevention with Bird Conservation

- **Parts of the property consist of drainage areas with a ponderosa pine overstory and a piñon-juniper understory**
- **Normally, thinning in these areas would not be recommended for wildlife habitat improvement, as these areas are naturally dense and provide an important habitat component**
- **However, they can also pose an extreme fire risk when in a wildland urban interface area**



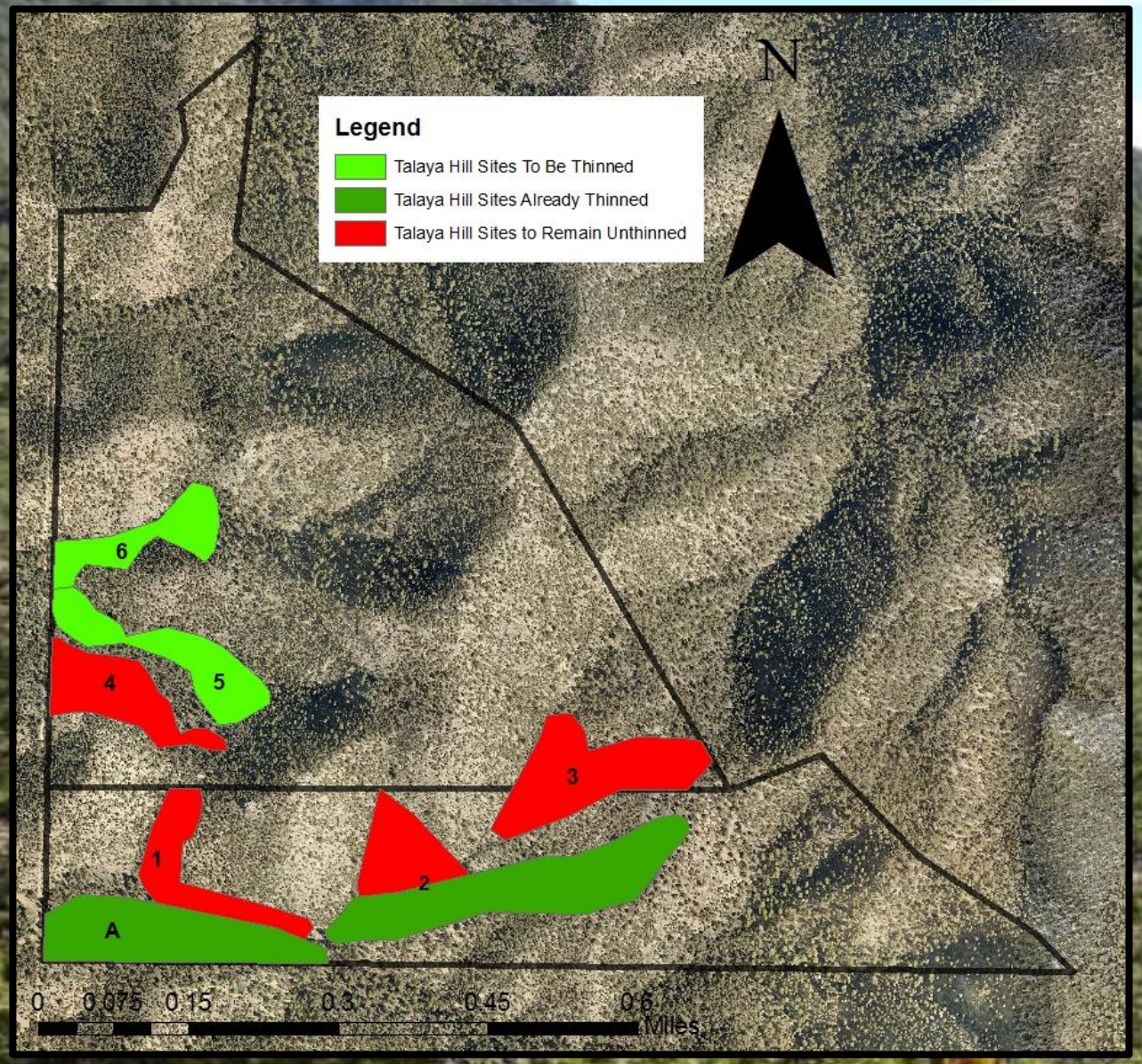
Approaches for Balancing Fire Prevention with Bird Conservation

- **To balance wildlife habitat with fire prevention, we thinned some of these sites, and left some unthinned**
- **Thinned sites were closer to residential areas, and posed a danger of allowing fire to spread up canyons into the national forest and the Santa Fe Watershed**
- **Unthinned sites were further from residential areas, and had thinned sites adjacent to them**
- **Thinning consisted of removing piñon-juniper serving as ladder fuel under ponderosa pine, and retaining dense, unthinned stands of piñon-juniper in interspaces between ponderosa pine**

Approaches for Balancing Fire Prevention with Bird Conservation

- **Parts of the property consist of dense persistent piñon-juniper woodland**
- **Because science suggests thinning in persistent piñon-juniper woodland may negatively impact priority bird species, such as Pinyon Jay, Juniper Titmouse, and Black-throated Gray Warbler, thinning was avoided in persistent piñon-juniper woodlands**

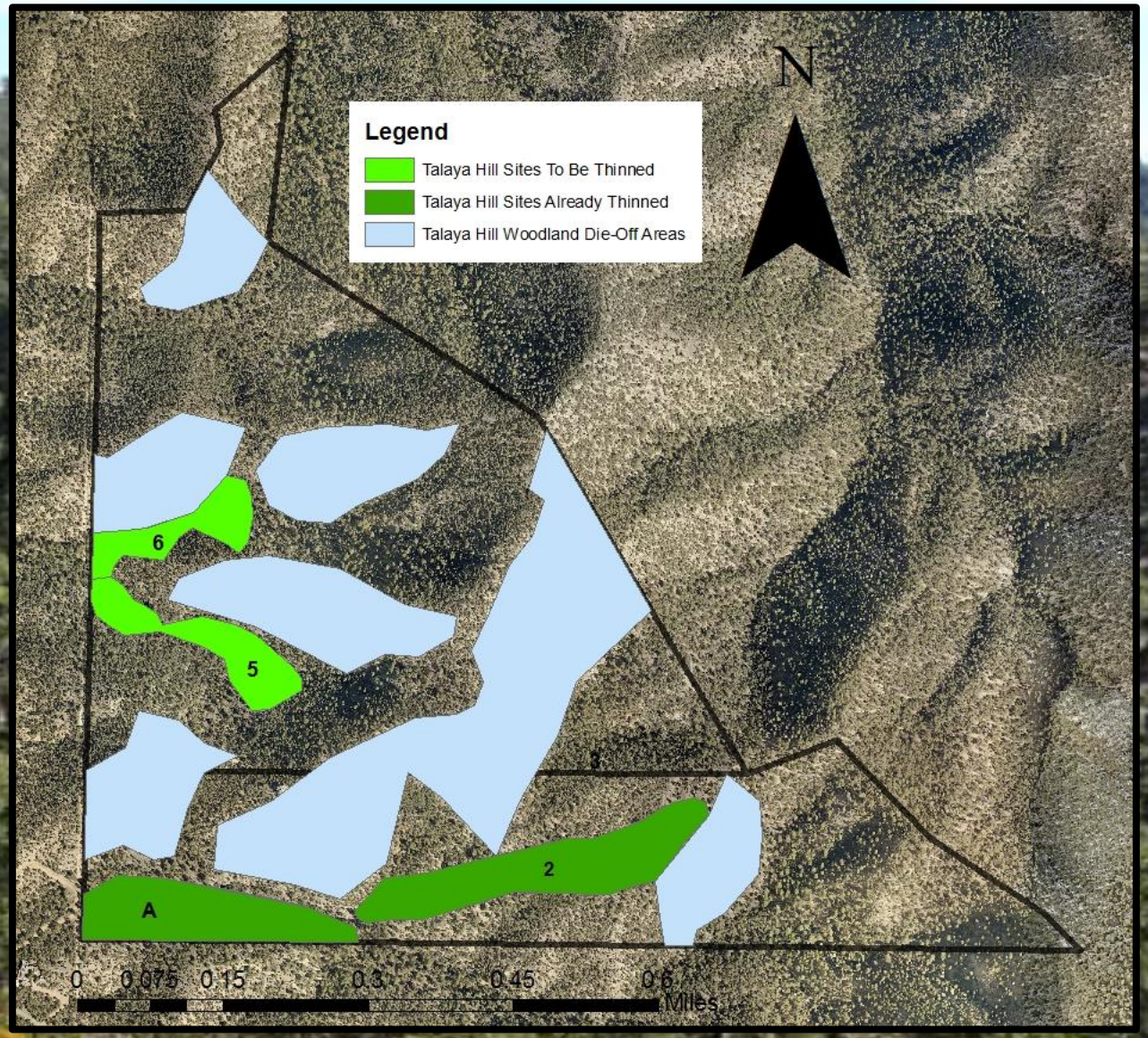
Approaches for Balancing Fire Prevention with Bird Conservation



- **Of all the areas with slopes appropriate for thinning, approximately half were thinned, and half were not thinned (based on parameters mentioned previously)**
- **At first glance, this does not appear to be sufficient enough for wildfire prevention, however…**

Approaches for Balancing Fire Prevention with Bird Conservation

- **…when you take into account numerous areas that have experienced extensive natural thinning (die-off in piñon-juniper woodlands due to drought and bark beetles) the thinned sites (either by humans or nature) are evenly spaced and overlapping, exactly what is recommended by fire professionals to slow or stop a fire**

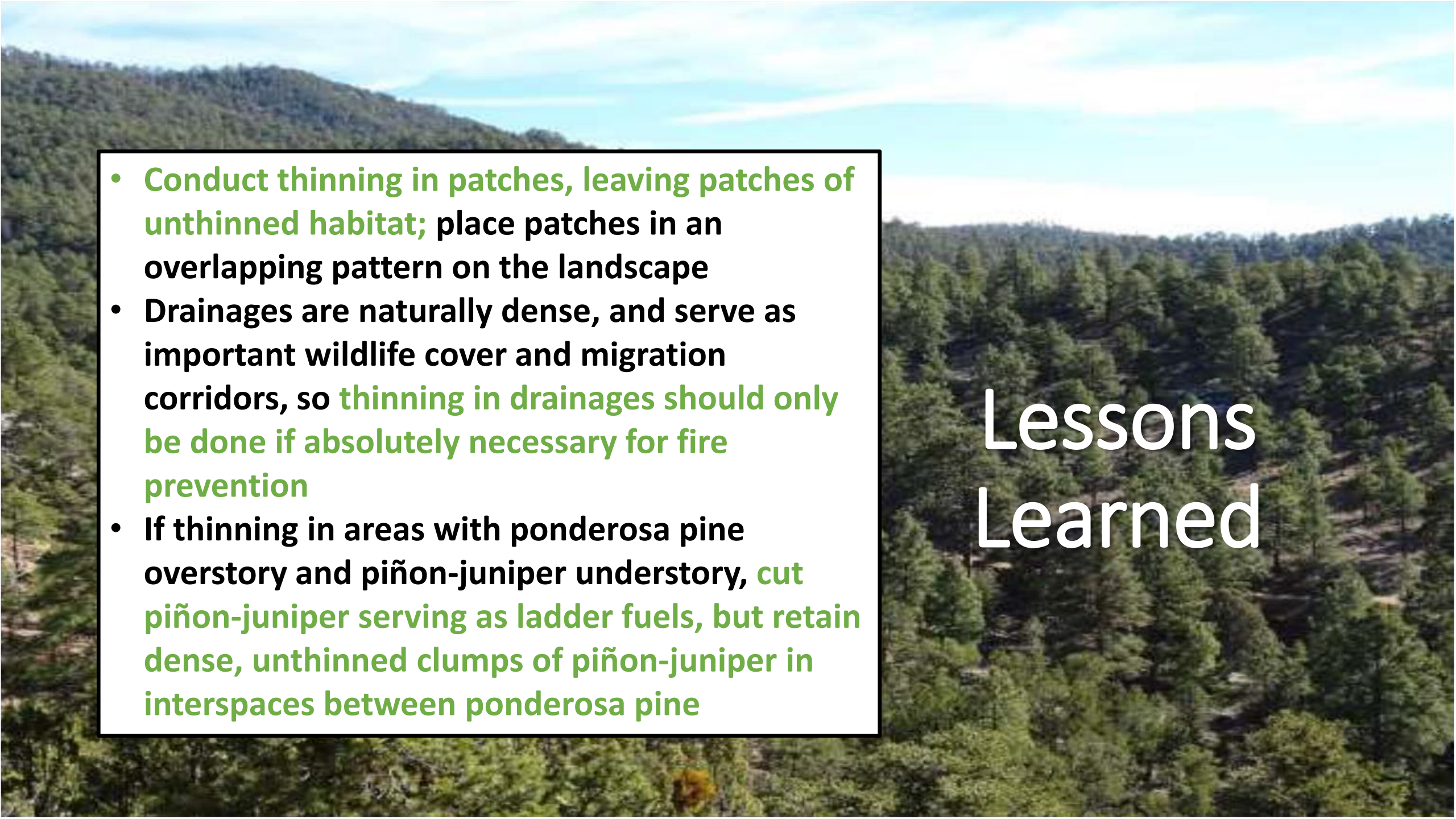


Lessons Learned

- **We, as a conservation community, need to define what constitutes a wildland urban interface (WUI)**
- **Situations such as Talaya Hill are definitely a WUI situation, but a few houses in an otherwise rural area probably does not constitute a WUI**
- **Thinning outside of WUI areas should be based upon needs of wildlife species and historical fire regimes**

Lessons Learned

- **In definitive WUI areas (such as Talaya Hill Open Space), approaches to balance wildfire prevention and bird conservation include:**
  - **Avoid thinning in persistent piñon-juniper woodlands whenever possible**
  - **Utilize existing natural die-off areas; nature may have done the thinning for you**
  - **If natural die-off areas exist, but are not sufficient, conduct additional thinning in die-off areas, as opposed to dense, healthy stands**
  - **If natural die-off areas do not exist, and thinning in persistent piñon-juniper woodlands is necessary, focus thinning on south and west-facing slopes, as these areas are likely to be less resilient under future climate change scenarios**

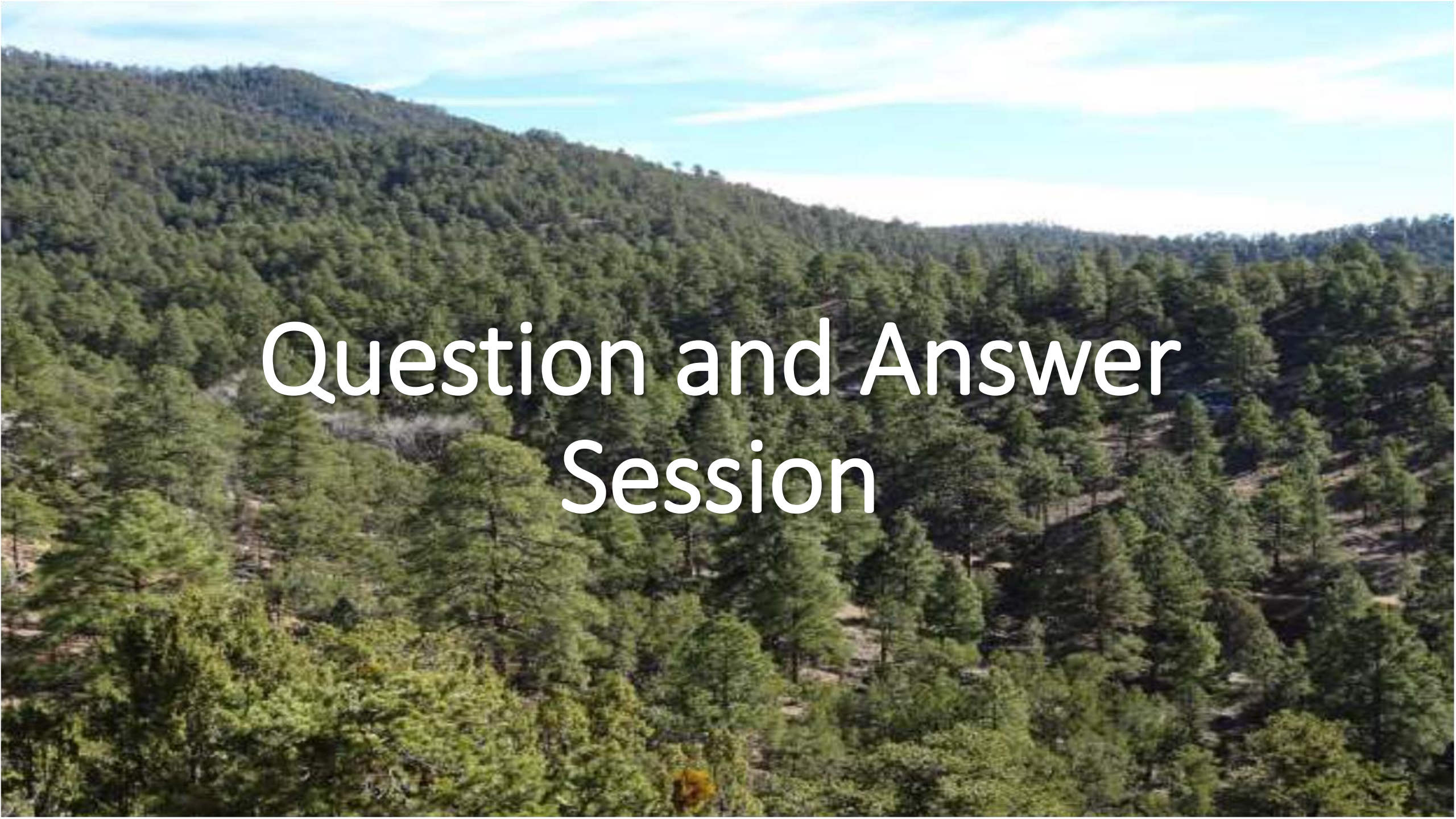


Lessons Learned

- Conduct thinning in patches, leaving patches of unthinned habitat; place patches in an overlapping pattern on the landscape
- Drainages are naturally dense, and serve as important wildlife cover and migration corridors, so thinning in drainages should only be done if absolutely necessary for fire prevention
- If thinning in areas with ponderosa pine overstory and piñon-juniper understory, cut piñon-juniper serving as ladder fuels, but retain dense, unthinned clumps of piñon-juniper in interspaces between ponderosa pine

Lessons Learned

- **Engage, respect, and listen to each other!**


Question and Answer
Session