



# Red Pine Regeneration Challenges

Michigan SAF Fall Conference

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Bay Harbor Village Hotel

# Overview:

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- The State Forest red pine resource
- DNR management regime
- Criteria for evaluating regeneration
- Issues on State Forest lands



# State Forest Red Pine

Currently:

250,000 acres

- ~85% planted

- ~15% natural

Planned:

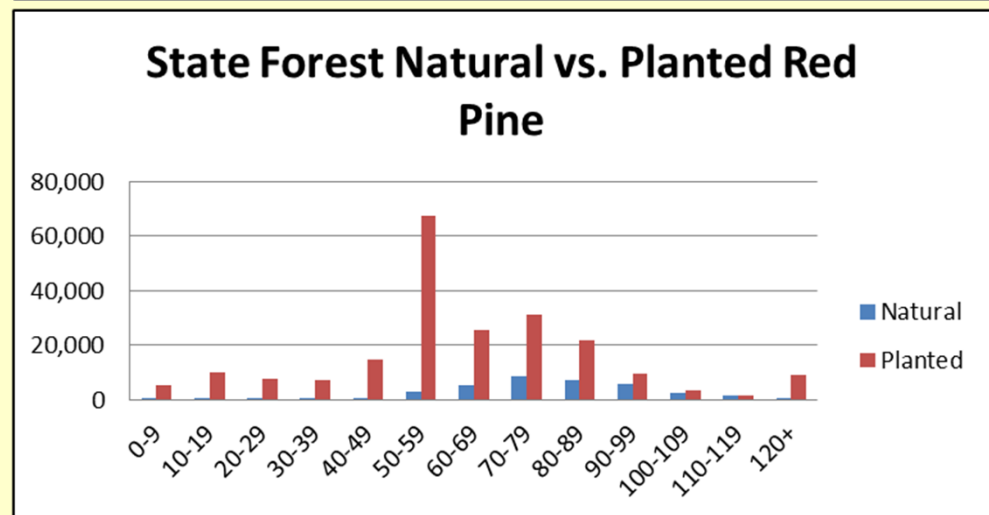
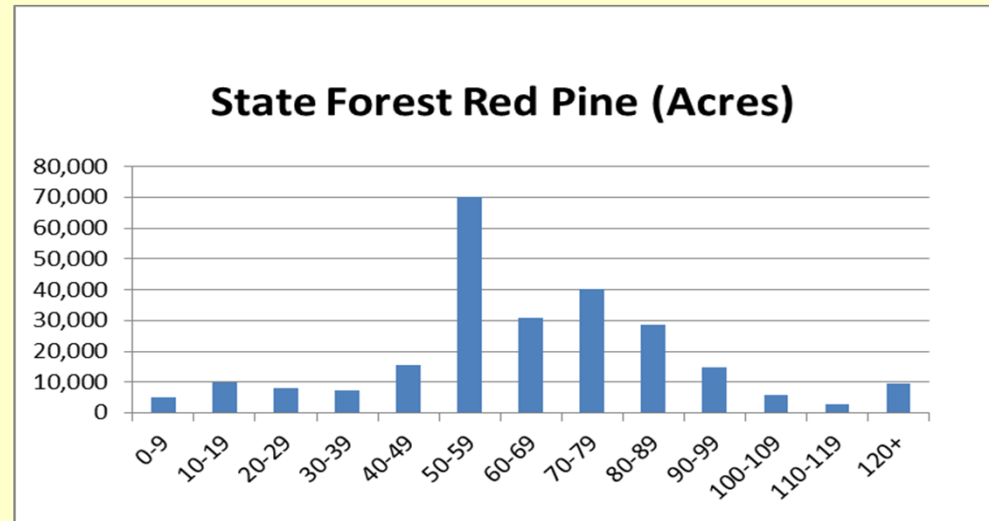
264,636 acres

- 60% in the NLP

- 25% in the EUP

Average site is in the  
50-60 site index range

(PArVHa, PArVVb, PArVAa)



# DNR Red Pine Management

- Planted Stands—
  - 80 to 90 year rotation
  - Thin 2 or 3 times, then
  - Final harvest
  - Followed by trenching & hand planting
    - Generally with 2-0 or 3-0 bare root stock
    - (900 seedlings/acre)
  - Sometimes with:
    - Roller chopping
    - Herbicide site prep & release



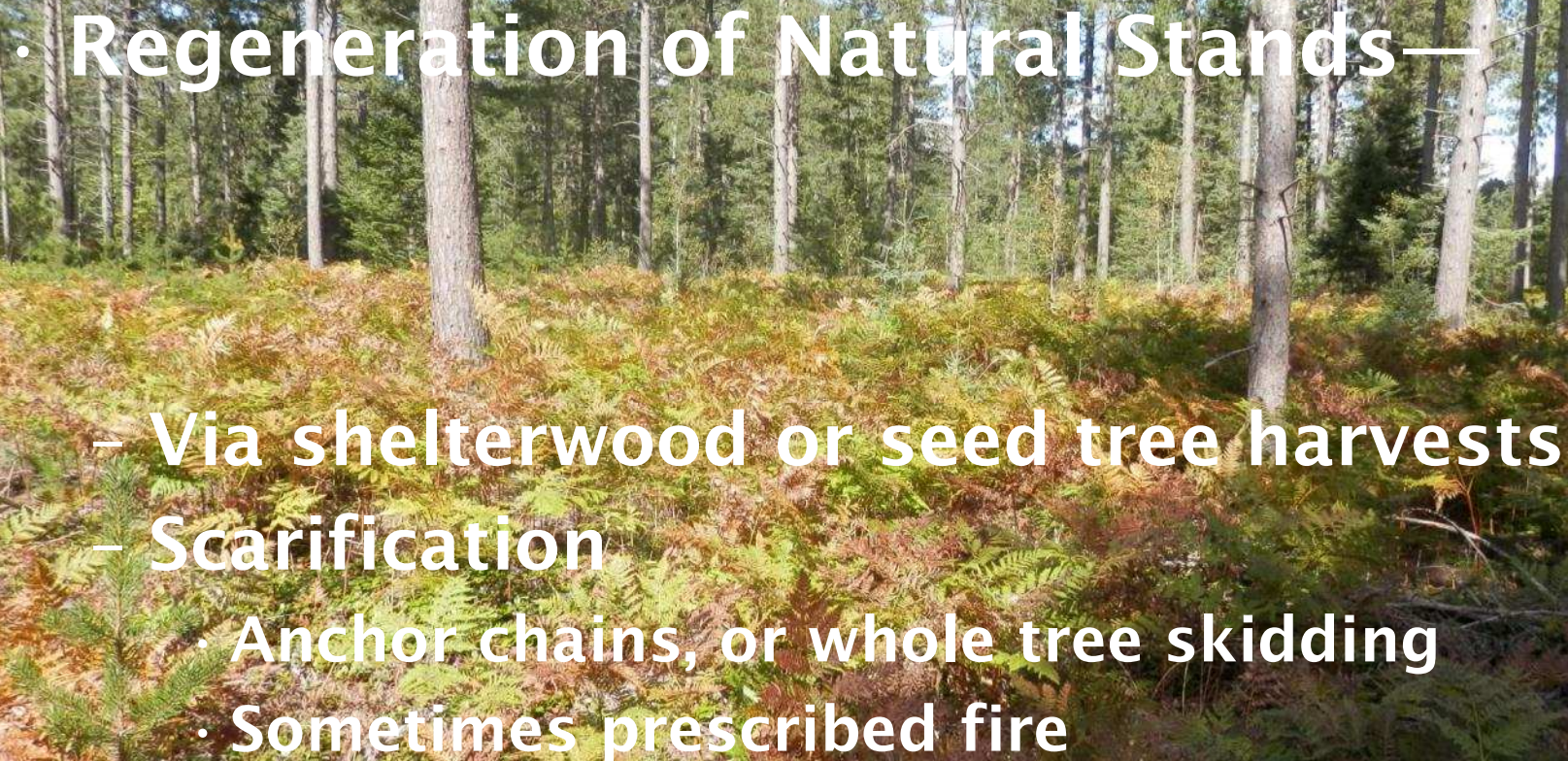
# DNR Red Pine Management

- Regeneration standards:
  - Evaluated using systematic fixed radius plot survey
  - Minimum stocking = 600 seedlings per acre
  - Well-distributed; 60% of the stand should be stocked





# DNR Red Pine Management

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- **Regeneration of Natural Stands—**
    - **Via shelterwood or seed tree harvests**
    - **Scarification**
      - **Anchor chains, or whole tree skidding**
      - **Sometimes prescribed fire**

# Common Challenges

- Natural Stands—
  - Some end as conversions



# Common Challenges

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- Natural Stands—
  - Generally poor regeneration success
    - Little red pine & other conifers
    - Sometimes copious hardwood regeneration
      - Red maple, pin cherry, aspen
  - Successes are typically medium to lower stocking, and mixed composition





# Common Challenges

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- Cost of natural regeneration
  - Additional site preparation expenses
    - Natural success! (\$60/acre)
    - Planting (\$230/ac.) vs. Natural failure (\$400/ac.)
  - Staff time & hassle
    - regeneration surveys, additional sale prep and administration to remove the overstory
  - Future revenue forgone due to delay in establishing the next stand
  - Efficiency
  - Pressure to accept poorly stocked stands that result



# Common Challenges

- Planted Stands—
  - High stumps!
  - Too much slash
  - Too much non-merchantable hardwood residual



# Common Challenges

- Planted Stands—
  - Hardwood competition—  
aspen, pin cherry, red maple

2014/10/02

# Common Challenges

- Planted Stands—
  - Monitoring– do ‘established’ sites remain free-to-grow?



# Common Challenges

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- Seedling Stock Quality
  - Containerized vs. bare root 2-0 seedlings





Thank You!

Questions?

**Contact:**

**David Neumann, MDNR**

**(517) 284-5887**

**[neumannd@michigan.gov](mailto:neumannd@michigan.gov)**