# Nursery resources for tribes growing native plants

***2021 Intertribal Ag Council Pacific Region Virtual Summit – 10 November 2021***

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United States Department of Agriculture

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# Land Acknowledgment

- Moscow Forestry Sciences Laboratory is located on the homelands of the Nez Perce (Nimiipu)

# What is RNGR?

## (Reforestation, Nurseries, & Genetic Resources)

- Unique, innovative collaboration across all three Deputy Chief Areas in the USDA Forest Service
  - National Forest Systems
  - State & Private Forestry
  - Research & Development
- Use expertise to develop and deliver resources to improving plant materials
- Technology used worldwide

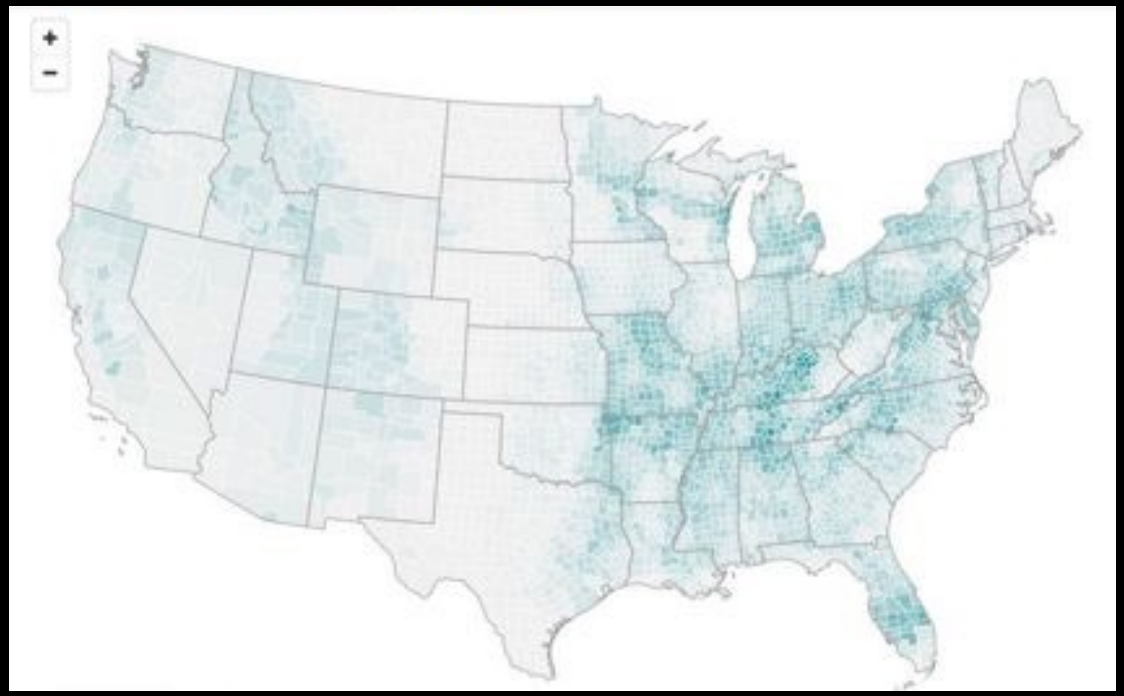
# Why RNGR?

And why might I be here presenting at the Intertribal Ag Council meeting?

- Agriculture – the science or practice of farming, including cultivation of the soil for the growing of crops and the rearing of animals to provide food, wool, and *other products*
- Growing trees and native plants for reforestation and restoration *is* agriculture

# Reforestation Needs

- In the US, estimates range from 1.3 to 7.6 million acres are in need of reforestation
- That’s a lot of land!

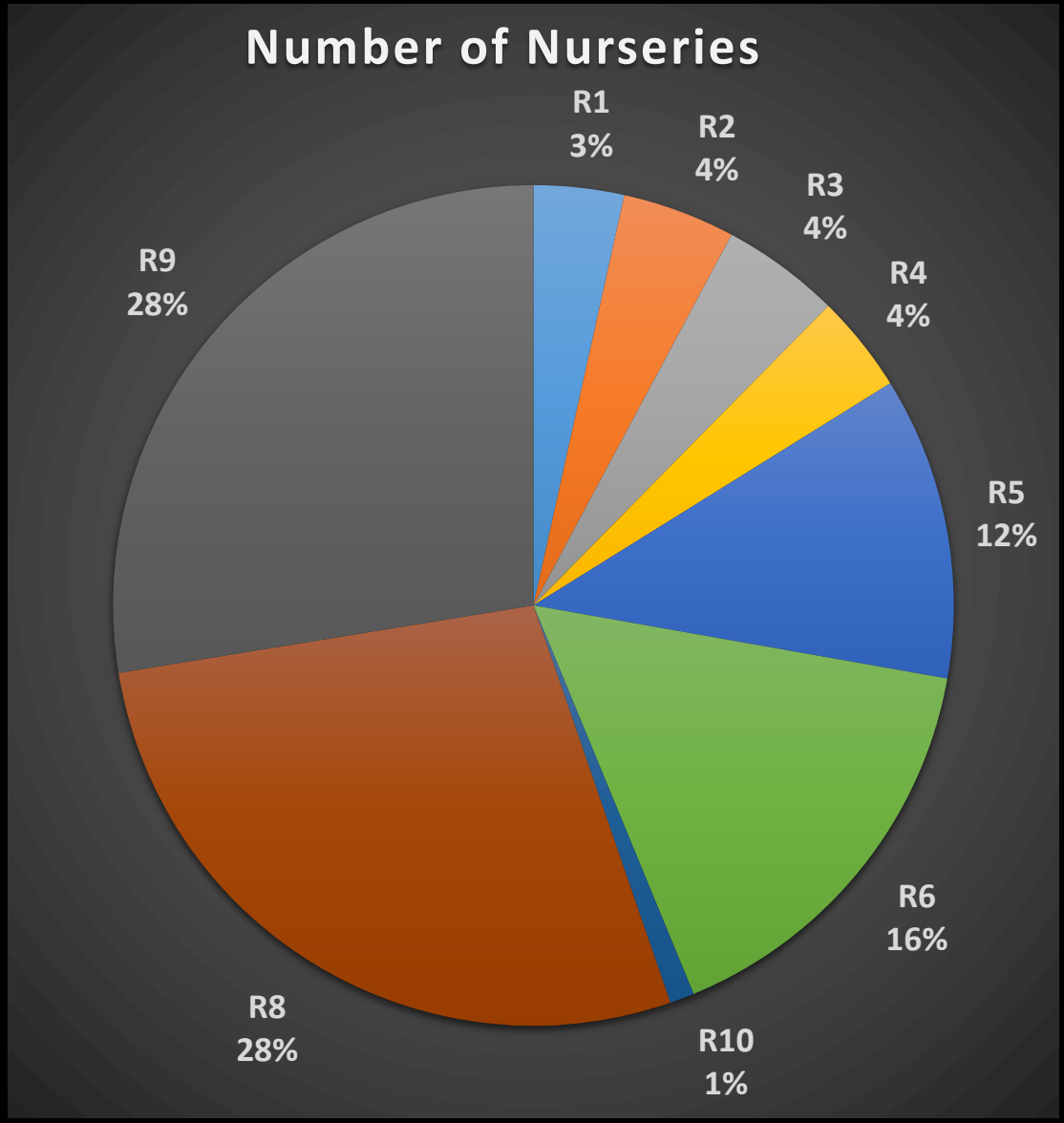


# Restoration Needs

- Currently, countries have committed to restoring over 1 billion hectares of land worldwide
- That's a lot of land!
- Doesn't represent the total amount of land in *need* of restoration

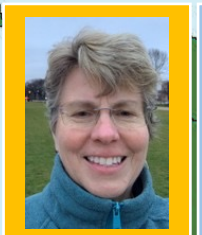
# Why RNGR?

- Approximately 1500 native plant nurseries in the U.S.
- Produce more than one billion seedlings annually
- Most lack local information resources
- RNGR works to fill the gap




*Estimated from number of listings in the National Nursery and Seed Directory (www.RNGR.net)*

# The National RNGR Team



**Diane Haase**
Western Nursery Specialist

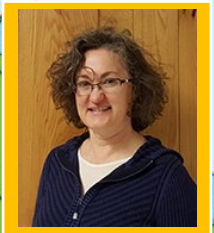
**Kas Dumroese**
Researcher/ National Nursery Specialist

**Jeremy Pinto**
Researcher/ Tribal Nursery Specialist

## Western Region

**Matt Horning**
Geneticist

## Northeastern Region



**Carrie Pike**
Northeast Nursery Specialist

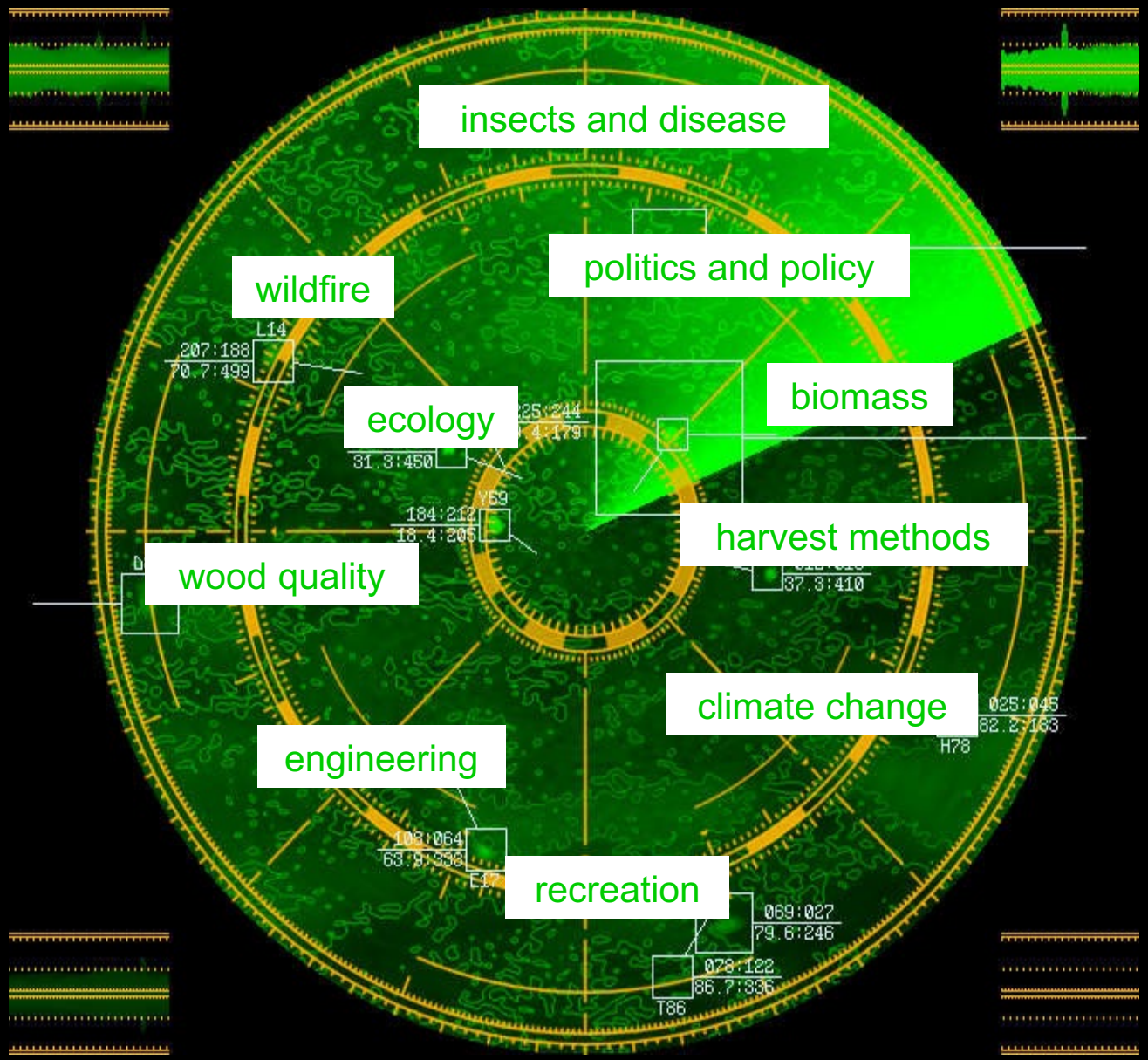
**Lindsey Colegrove**
Southern Nursery Specialist

**Vic Vankus**
National Seed Lab Director

## Southern Region

Western Territories (Not pictured)
- American Samoa
- Guam
- Palau
- Federated States of Micronesia
- Northern Mariana Islands
- Republic of the Marshall Islands

Southern Territories (Not pictured)
- Puerto Rico
- Virgin Islands




***Nurseries, seed, and seedlings***

…much too often off the radar.

Seedlings are the building blocks for nearly all healthy forests and landscapes

# Quality Seedling Production Requires Skill and Knowledge

- Plant physiology, morphology, and phenology
- Genetics
- Environment
- Soil quality
- Water management
- Seed technology
- Species characteristics
- Ecotype differences
- Culturing techniques
- Pest Management
- Storage and handling
- Customer relations
- Administration and budgeting

# RNGR Activities

- Technical Assistance
- Publications and Presentations
- Annual Nursery Conferences
- Training and Workshops
- Research
- National Seed Laboratory
- International Assistance
- Online Resources
- Assistance to Tribes

# Ecological Restoration

"Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed."

- Often by human activity
- Can initiate or accelerate ecosystem recovery

SER online: https://www.ser-rrc.org/what-is-ecological-restoration/

# Native Americans and Plants

<u>History of:</u>

- Food
- Shelter
- Textiles
- Medicine
- Ceremony

# Traditional Ecological Knowledge (TEK)

“TEK refers to the knowledge base acquired by indigenous and local peoples over may hundreds of years through direct contact with the environment. It includes an intimate and detailed knowledge of plants, animals, and natural phenomena, the development and use of appropriate technologies for hunting, fishing, trapping, agriculture, and forestry, and a holistic knowledge, or ‘world view’ which parallels the scientific discipline of ecology.”

*Traditional Ecological Knowledge: Concepts and Cases. Inglis (ed) 1993*

# Native Plants on Indigenous Lands

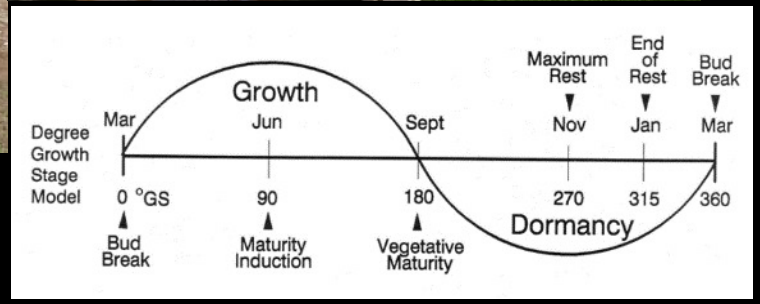
<u>Contemporary Management Needs:</u>

- Restoration
- Reforestation
- Wildlife
- Bioengineering
- Invasive Species
- Disturbance
- Climate Change
- Landscape

# Contemporary Management

<u>Assisted with Modern Tools and Concepts</u>:

- Greenhouses
- Climate control
- Irrigation systems
- Mechanical equipment
- Plant physiology
- Fertilizers
- Target plants
- Etc.




(Fuchigami and Nee 1987; Burr 1990)

# Native Plants on Native Lands

Additional Needs

- Cultural
  - Preservation
  - Education
  - Availability
  - Economic
  - Food
  - Medicine
  - Textiles


# Native Plants & Land Management in Indigenous Communities

## Historical Management Goals

- Food
- Shelter
- Textiles
- Medicine
- Ceremony

## Contemporary Management Goals

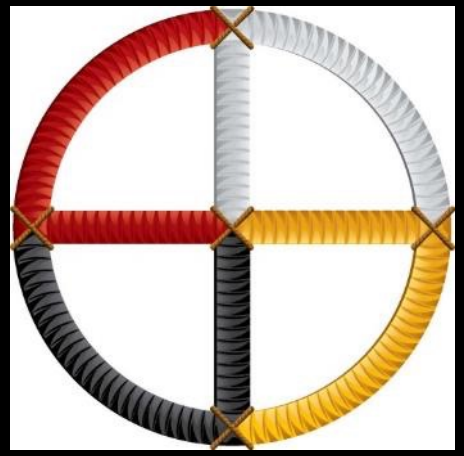
- ***Restoration***
- Reforestation
- Wildlife
- Climate change
- Invasive species concerns
- Disturbance

## Contemporary Cultural Goals

- Preservation
- Education
- Food
- Medicine
- Textiles
- Economics

# Restoration Using Nurseries & Potential Conflicts with Traditional Ideals

- TEK absent
- Plant Production Concerns:
  - Artificial
    - Spirituality
    - Connectedness
  - Trophic levels
    - Medicine
    - Textiles
  - Genetics



# Finding a Balance

Goal:

- Successful use of plant materials on Indigenous lands

Means:

- Use both science and Traditional Ecological Knowledge
- Build trust
- Engage community

# RNGR Tribal Nursery Emphasis

**Since 2001**

- Technical Assistance
  - On-site visits, phone, & email
- Publications
- Intertribal Nursery Council Meetings, Workshops, & Training Sessions

2001 Durango, CO
Southern Ute Tribe

2010 Arlington, WA
Stillaguamish Tribe

2019 Tulsa, OK
Muskogee Tribe

# Technical Assistance to Tribes

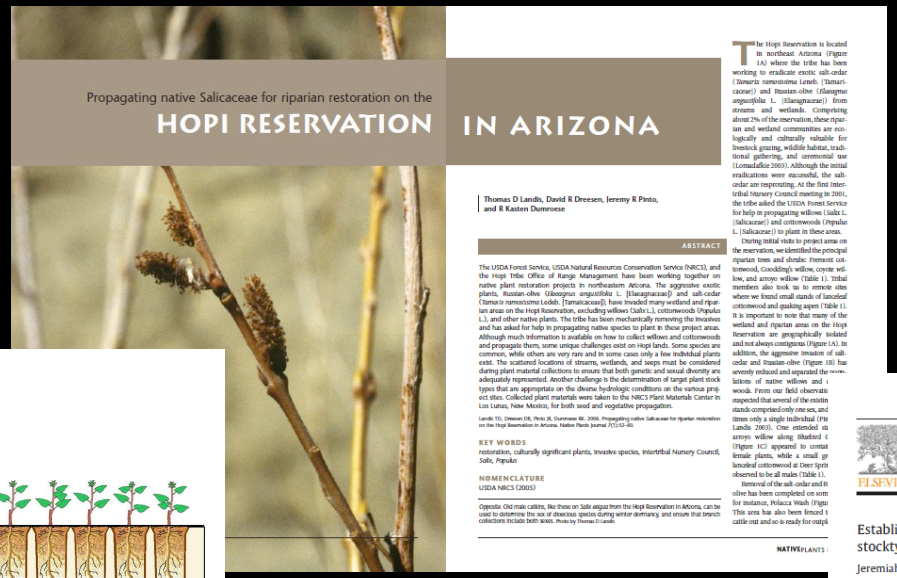
Goal:

- Quality seedlings for the restoration & reforestation of tribal lands

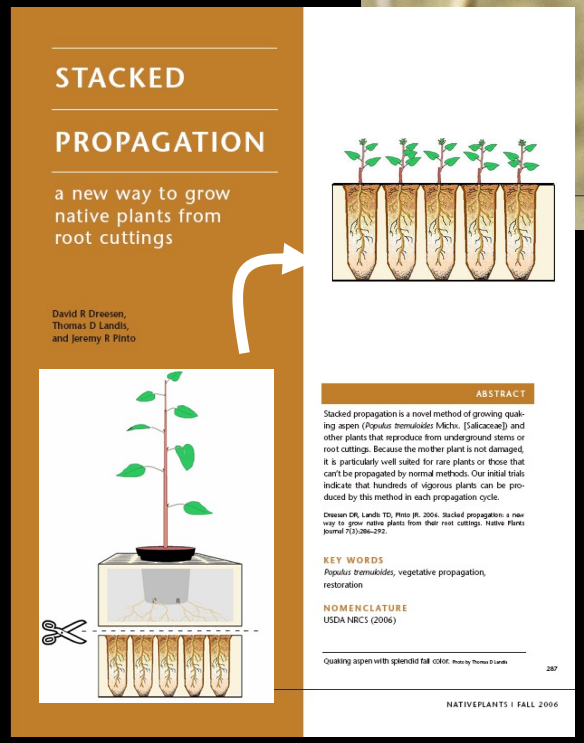
Outcomes:

- Consultations
- Cultural Plant Propagation Center
- Plant materials programs
- Equipment surplus transfers
- Cooperative agreements
- Plant materials to NFS
- Pollinators
- USDA Climate Hub
- CCAA Program
- Publications

# Publications

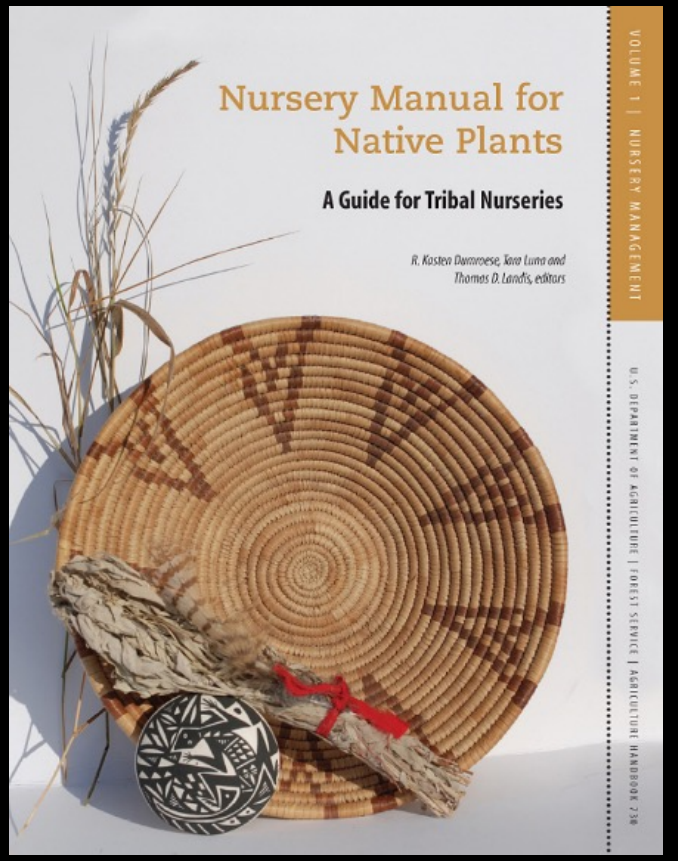



Case studies




Protocols


Research




Manuals

# Intertribal Nursery Council

Forum for:

- Technology transfer
- Conservation education
- Reforestation
- Restoration
- Peer-to-peer information sharing

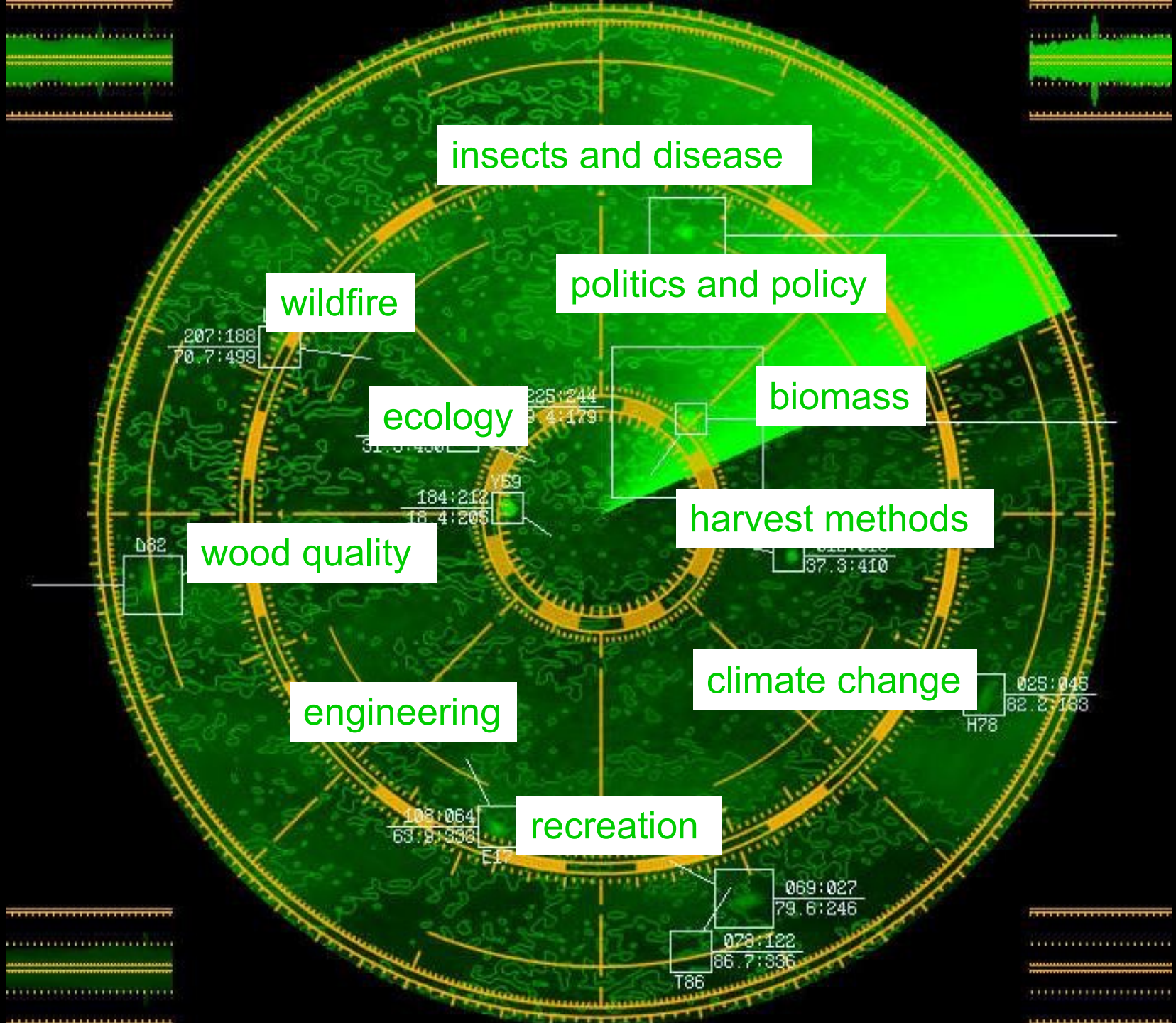
Impact:

- Providing Tribes with nursery technical knowledge to improve seedling quality and outplanting establishment success

# Student involvement

INC Member Concern: succession planning

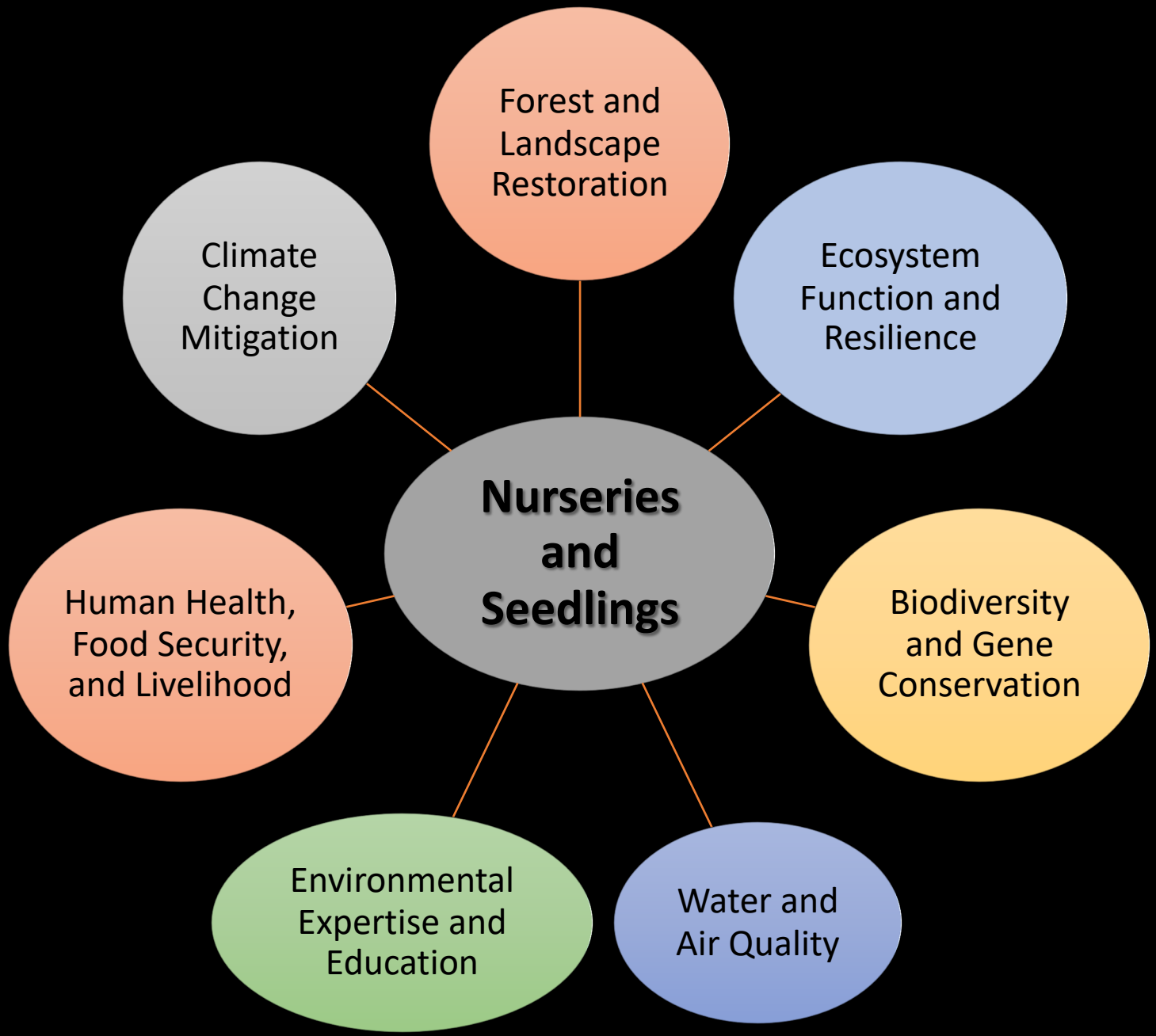
- University of Idaho
  - Teaching
  - Graduate students
- Travel scholarships to INC meetings
  - Experience a professional meeting
  - Give presentations

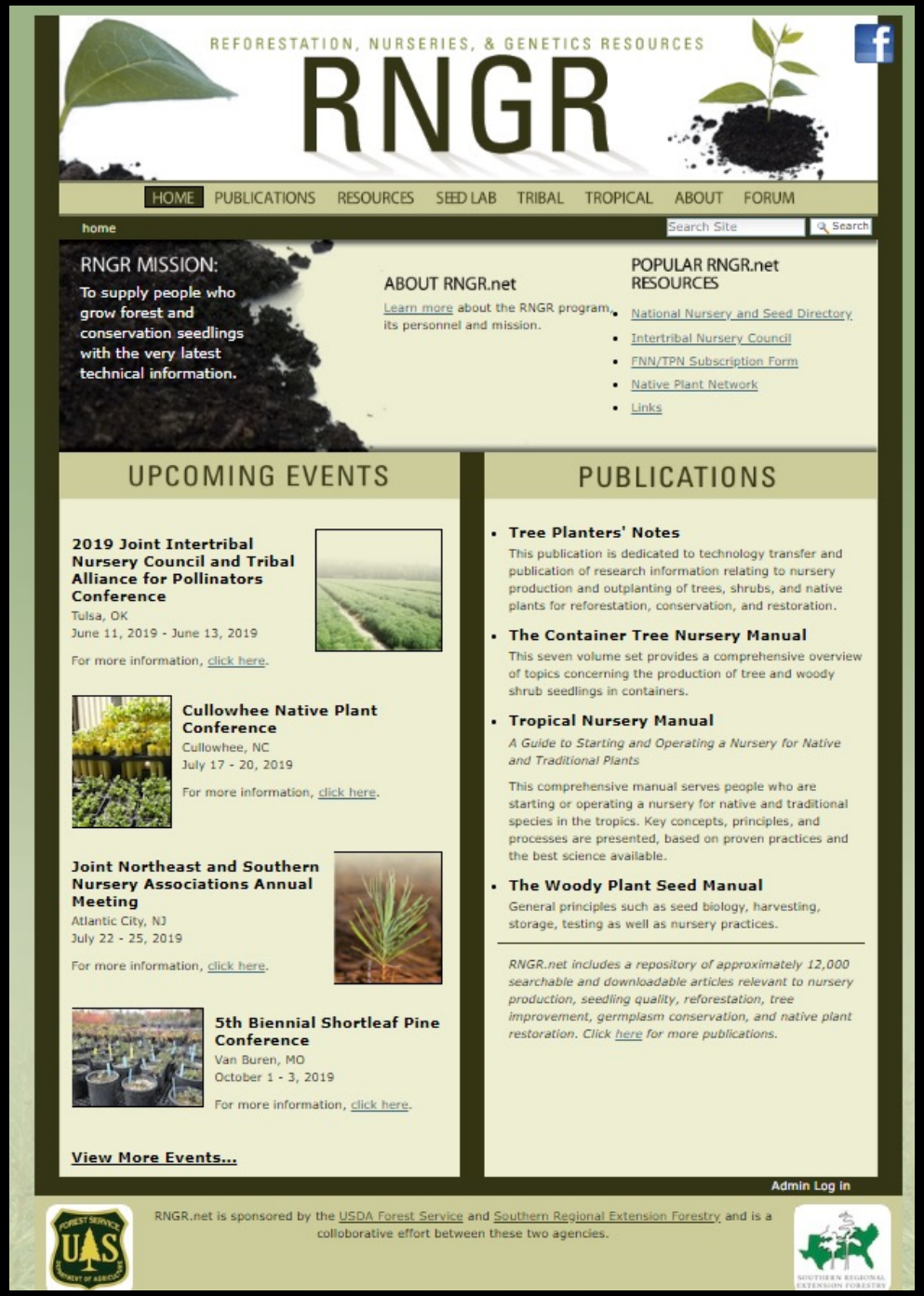



***nurseries & seedlings***

RNGR works to make sure nurseries, seed, and seedlings are not only “on the radar,” but also…

…are recognized and functioning as a hub for meeting ecological, economic, and social goals.






# Online Resources
# RNGR.net

- Publications
- Directories
- Calendar
- Links
- RNGR Contact Info
- Discussion Forum
- Native Plant Network

*Averages a visit and a download every 11 minutes!*

# Thank You!
# Ahehee'!

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I ♥ Native Plants
RNGR.net

I ♥ Baby Trees
RNGR.net

Intertribal Nursery Council

Forest Service
Department of Agriculture
Rocky Mountain Research Station