Science, Technology, Engineering, & Mathematics (STEM) Connections to Careers with the SC Forestry Commission
### What Do We Do?

<table>
<thead>
<tr>
<th>Forest protection</th>
<th>Forest management</th>
</tr>
</thead>
<tbody>
<tr>
<td>wildfire, insects and diseases</td>
<td>public, private and state forests</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Forest resource development</th>
<th>Information and education</th>
</tr>
</thead>
<tbody>
<tr>
<td>inventory, job creation, water quality, seedlings</td>
<td>landowners, public, teachers and students</td>
</tr>
</tbody>
</table>
WHAT WE DO
STATE FORESTS

- 94,000 acres in 5 actively managed forests.
- Sandhills, Manchester, Wee Tee, Poe Creek, and Harbison
- 25% of revenue is given to school systems in counties of origin (*about $600,000 annually*).
SOUTH CAROLINA FOREST FACTS

• 13 million acres of forestland
• 67% of SC’s land area is forested
• 52% hardwood / 48% pine types
• 24% planted pine, produces >50% of timber supply
• 88% private / 12% public

• 200,000 family forest owners (86,000 own >10 acres)
• Growth exceeds harvest
• Timber volumes at record levels
• Scarcity of pulpwood-sized pine timber
SC FORESTRY’S 2015 ECONOMIC IMPACT

$21 BILLION

#1 Manufacturing Sector in jobs and labor income

$1.3 Billion in forest products exports

#1 Harvested Crop totaling $758 million

84,425 Jobs in the forestry industry

#1 Export Commodity from the Port of Charleston

20/15 Project

2009 Public/Private partnership to increase forestry’s economic impact from $17.4 billion to $20 billion by 2015.
Many jobs with the SCFC require STEM skills

- Project Foresters
- Incident Management
- Urban Forestry
- BMP Foresters
- Law Enforcement
- FIA Foresters
- Forest Health
- Nursery & Seed Orchard
- Forest Protection
- Forest Management
- Economic Development
- Communications
- Technology
- Administration
- Wildlife
- Forest Technician
- Fire Warden
- Equipment & Mechanics
- Dispatch
- Pilots
Forest Inventory Analysis

- FIA Foresters collect forest resource data on a network of permanent forest inventory plots across the entire state. The data they collect is used to provide the necessary building blocks for forest resource assessments and forest policy.

Things FIA Foresters do:

- recognize and describe forest treatments and disturbances
- identify tree species
- evaluate trees for the potential to become forest products
- identify non-native invasive plant species
- collect tree measurements that are used to determine tree volume and growth
- identify tree diseases and insects
Forest Inventory Analysis

- STEM Skills
  - Tree physiology
  - Tree identification
  - Measurement, Estimation, & Statistics
  - GPS & GIS
  - Use of measuring instruments to collect data
  - Computer skills for reporting & communication
Incident Management Team

• Each team is composed of sections – Plans, Operations, Logistics, and Finance

• IMT provides incident support and organization to a multi-jurisdictional incident

• IMT is comprised of many different personnel of varying skills and knowledge

• Skills range from personnel management to resource coordination and organization
Incident Management Team

• STEM Skills

  – GPS & GIS

  – Piloting drones to assess situations

  – Computer skills for finance, inventory, communication, reports, logistics

  – Using weather instruments and analyzing weather data to predict severe weather

  – Analyzing fuels, weather, and topography to predict fire behavior

  – Risk assessment and emergency medical service
Forestry technicians can serve a multitude of roles within the Forestry Commission. These positions include but are not limited to: timber technician, inventory technician, and wildlife technician.

Things Forestry Technicians do:

- Tree planting & harvest operations
- Timber stand assessments
- Measuring & marking trees for harvest
- Wildfire response & prescribed burning
- Wildlife & recreation management
- Setting up timber sales
- Patrolling property, responding to incidents, and assisting law enforcement
Forest Management/Forestry Technician

• STEM Skills

  – GPS & GIS
  – Advanced laser and ultrasonic measurement devices
  – Field data collection of seedling survivorship, soil & water qualities
  – Weather data collection & analysis
  – Forest inventory and data analysis for management decisions
  – Analyzing data for timber stand improvement
Urban Forestry

- Urban foresters are tasked with providing assistance to public and private land managers to help improve urban forest management.

- They work to help communities keep trees healthy and sustainable so that they can continue to receive the numerous benefits that trees and forests are connected with, especially cleaner air and water, beauty and shade, reduced risk of flooding and improved human health.
Urban Forestry

• STEM Skills

  – arboricultural knowledge in addition to a foundation in traditional forest management, biology, and tree physiology

  – Use of specialized equipment for tree identification, inventory, measurement, & data collection (resistograph and soil probe in pictures)

  – Tree risk assessment and identification of disorders & disease

  – GPS & GIS

  – Calculation of water-holding capacity of trees to quantify stormwater mitigation