Boy Scouts of America Forestry Merit Badge
Resource Sheet for NC Forestry Association Members

This document provides a list of resources and information to supplement the BSA Forestry Merit Badge Requirements. The number (3-A-3) corresponds to the sections of the requirement guide.

3-A-1

- In 2020, the forest sector in North Carolina—including forestry and logging operations, sawmills, furniture mills, and the pulp and paper industries—**directly** contributed **$20.6 billion** in industry output,
- On average, every dollar created in the forest sector contributed an additional sixty cents to the North Carolina economy.
- The forest sector in North Carolina directly generated about **$19.5 million** in state and local taxes and **$826.1 million** in federal taxes.

https://content.ces.ncsu.edu/economic-contribution-of-the-forest-sector-in-north-carolina

3-A-2
https://efi.int/forestquestions/q8#:~:text=Staying%20in%20forest%20environments%20has,effect%20on%20the%20emotional%20state.

3-A-3

The following factors have a major impact on forest soil productivity and site index:

Topsoil Depth. The depth of the uppermost soil layer is a critical factor affecting tree growth. Topsoil is highest in organic matter and nutrients, is usually well aerated and drained, and allows maximum root growth and root penetration.

Soil Texture. The proportion of sand, silt, and clay in the topsoil and subsoil layers is called texture. Sandy soils are normally very well drained and often lack nutrients due to constant leaching loss. At the other end of the spectrum are the pure clay soils comprised of very small, fine soil particles.

Subsoil Consistence Class. Consistency of the subsoil layer is another important factor in forest soil productivity. The combination of soil-sized particles and the physical and chemical properties of each individual particle type in a given soil determine the soil's consistence class.

Limiting Layers. A layer which restricts the downward penetration of a tree's root system will reduce tree growth in direct relation to the depth of layer. In rare instances, a limiting layer may increase site productivity, such as on sandy soils where the layer may retard leaching of nutrients and in crease available moisture.

Fertility. Southern pines grow over a wide range of soil fertility levels. Fertilization is normally not recommended early in the rotation except in the case of a critical deficiency of a major nutrient such as phosphorus. A soil test prior to site preparation will alert a landowner to critical deficiencies. Research has shown conflicting results in forest tree response to nitrogen fertilization, particularly early in the rotation. Growth may be suppressed if the fertilizer increases

the growth of competing weeds. Best results from early fertilizer use arise in combination with herbicide or mechanical control of competing vegetation. Late rotation fertilization done five to eight years before final harvest increase timber yields in many situations, but may not be economically practical.

Internal Drainage. Few tree species can grow in soils which are constantly wet. Drainage can be improved in some cases by tilling, ditching or adding bedding as a site preparation method.

https://content.ces.ncsu.edu/forest-soils-and-site-index

3-A-4

BEST MANAGEMENT PRACTICES (BMP) — Management practices that maintain and improve the environmental values of forests associated with soils, water, and biological diversity; primarily used for the protection of water quality. These practices are often used during and following harvesting of timber.

WATER BAR — A diagonal ditch or hump in a trail that diverts surface water runoff to minimize soil erosion.

WATER CONTROL — Management of water (both surface and subsurface) to maintain plant growth, water quality, wildlife habitat, and fire control.

https://content.ces.ncsu.edu/understanding-forestry-terms-a-glossary-for-private-landowners

3-A-5

The carbon cycle is **a process where carbon dioxide travels from the atmosphere into living organisms and the Earth, then back into the atmosphere**. Plants take carbon dioxide from the air along with water and photosynthesis from the sun and use it to make food.
https://c03.apogee.net/mvc/home/hes/land/el?utilityname=dixieec&spc=kids&id=16174
Carbon sequestration is **the capturing, removal and storage of carbon dioxide (CO_2) from the earth's atmosphere**. It's recognized as a key method for removing carbon from the earth's atmosphere.
https://www.nationalgrid.com/stories/energy-explained/what-carbon-sequestration

3A-6,7,8 Can be tied into other requirement discussion or individually.

4-A MULTIPLE USE — The management of land or forest for more than one purpose, such as wood production, water quality, wildlife, recreation, aesthetics, or clean air.

4-B SUSTAINABLE FOREST MANAGEMENT (SUSTAINABLE FORESTRY) — The practice of forestry in a way, and at a rate, that maintains the forest's biodiversity, productivity, regeneration capacity, and its health in such a way that it fulfills, now and in the future, relevant ecological, economic, and social functions.

4-C EVEN-AGED MANAGEMENT — A forest management method in which all trees in an area are harvested at one time or in several cuttings over a short time to produce stands that are all the same age or nearly so. This management method is commonly applied to shade-intolerant conifers and hardwoods.

4-D

An intermediate cut made to improve the form, quality, health, or wildlife potential of the remaining stand.

https://content.ces.ncsu.edu/understanding-forestry-terms-a-glossary-for-private-landowners

Other Resources:

https://www.ncforestservice.gov/index.htm

https://forestry.ces.ncsu.edu/