Soil Scientist (GS-11)

Major Duties

A Forest Service Soil Scientist (GS-11) conducts studies to analyze and monitor soil qualities and other information about soil characteristics to be used in resource management and planning. A soil Scientist job involves

- Designing and recommending soil management programs.
- Monitoring the effects of forest activities on soil productivity.
- Giving technical advice used to help plan land management options on natural resources.
- Conducting reconnaissance and detailed soil surveys.
- Preparing reports describing land and soil characteristics.
- Recommending priorities for soil projects in the future.
- Advising land managers of capabilities and limitations of soils for a variety of contemplated uses and activities (e.g., timber sales, watershed rehabilitation projects, transportation planning, soil productivity, recreation development, etc.).
- Training other personnel in how to do soil surveys.
- Preparing technical papers and attending professional soil science meetings.

This career includes many different assignments and involved making recommendations about many resource areas. A Forest Service Soil Scientist needs to be able to analyze and determine the characteristics of different types of soils. Soil types are complex and the geographical areas and soil scientist surveys are varied. Aerial photos are often used to research the areas. Soil Scientists work in both the Office and the field. The work requires walking over rough and uneven land, with continuous bending, crouching, stooping, and using shovels and spades to gather samples. The Soil Scientist may also supervise other employees. This can require monitoring employee performance, conducting performance appraisals, developing budgets, etc.

A Typical Day

Terri took a job with the Forest Service after graduating with a college degree in science. Her first Forest Service job was as a Soil Scientist GS-5, working under Bill Stevens who had been a Soil Scientist at the Forest Service for 23 years. Five years later, after Bill retired, Terri was promoted to the position Bill held – Soil Scientist GS-11

Terri learned a lot while working with Bill, and she knew she'd need to apply every bit of her knowledge in the upcoming month because her last project requires analyzing soil characteristics in a 20,000 acre region that includes timber, range land, and large watershed supplying water to five different towns.

Today she is planning how to tackle the job. Terri expects to spend at least two full weeks in the field gathering soil samples and making a detailed survey of the entire 20,000 acres. She will be supervising a crew of three other Forest Service employees, who have been assigned to help her on the project. She will also be working with a Geologist, Hydrologist, Engineer, Fisheries and Wildlife Specialist, and Forester to develop an overall plan on how the area should be managed in the next 10 years.

Knowledge and Education

A college degree is recommended for those interested in becoming a Forest Service Soil Scientist. Courses leading to a college degree in soil science include;

- Mathematics (algebra, geometry, trigonometry, differential equations, etc.)
- Biology
- Physical Science (Earth Science)
- Statistics
- Geology
- Hydrology

Career Path

Jobs that lead to becoming a Soil Scientist (GS-11) include

- **Student Trainee (Soil Science GS-4) –** this is a student trainee position under a cooperative education agreement with a college or university. The person holding this job participates in many on-the-job training activities to increase their basic knowledge of the job as practiced in the Forest Service. Types of things this person does include
    - Helping with field based soil surveys
    - Making observations and tentative soil interpretations.
    - Taking notes about the land characteristics for reports and map preparation.
- **Soil Science (GS-5) –** the person in this position assists in conducting standard forests and rangeland soil resources studies. Typical activities include;
    - Collecting soil samples for laboratory analysis to determine soil characteristics.
    - Selecting, describing, and classify soil properties.
    - Helping analyze soils and preparing reports to be used in land use planning.
    - Writing soil survey reports
    - Performing other activities (timber cursing, fire suppression, etc.) to broaden knowledge about Forest Service.