

# Soil Color

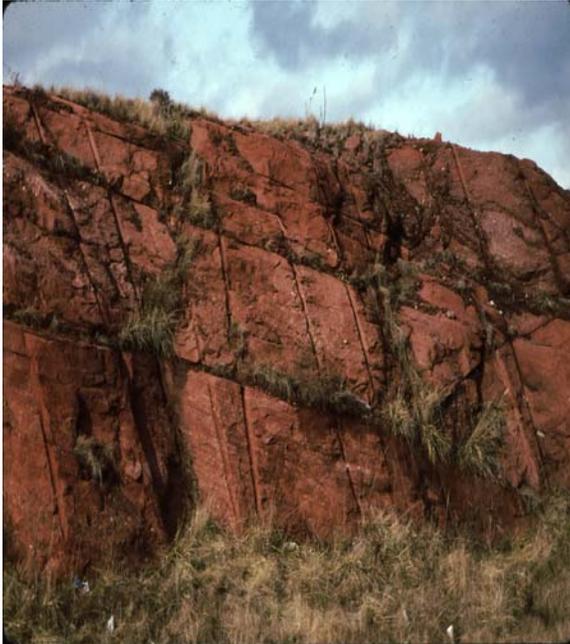
Developed by: Peter C. Fletcher



**Being able to interpret  
soil colors and color patterns  
is a powerful tool**

## Soil Coloring Agents

- **Organic matter: brown to black color**
- **Iron: yellow, orange, and red colors**
- **Manganese: purplish black color**
- **Color of the mineralogy of the individual soil particles.**



**Mineralogy of the Soil  
can influence the soil  
color**

**Red Mesozoic sediments  
within the Connecticut  
River Valley**



**Many of the soils within  
New England have a  
dominant quartz mineralogy.**

**If the soil coloring agents are  
stripped from the sand and silt  
particles, these soils have a  
light gray color.**

# Munsell Soil Color System



**About 350  
individual, standardized  
soil color chips**

**Munsell System uses three  
elements of color: hue, value  
and chroma.**

**10YR 5/6**

**Hue refers to the dominant spectral color:**

**R (red),  
Y (yellow),  
YR (yellow-red),  
etc.**

**Value, different shades of gray**

**Value of 1 is black and a value of 10 is white. Values of 2 through 9 are different shades of gray.**

**Chroma is the strength or intensity of the color and ranges from:**

**0 (neutral, having no color) to 10 with the maximum amount of color.**

## **Gley Pages**

- **Gray , bluish gray, and greenish gray colors associated with soils that formed under prolonged periods of soil saturation and reduction.**
- **Two gley color pages at the front of the color book.**

## **Determining Soil Colors in the Field**

- **Moisture content (moist)**
- **Quality of light (sunlight)**
- **Soil surface (broken face)**
- **Individual's ability to read colors**

## **Documenting Soil Colors**

- **Matrix color is the dominant soil color of the soil horizon.**
- **Where there are multiple soil colors, the matrix color is typically greater than 50% of the area.**
- **The less colors are often redoximorphic colors.**

**Multiple Colors**  
**Matrix color verses lesser color**



**For those new to soil colors:**

- **Start on the 10YR hue page, many upland soil colors are on this page.**
- **Compare soil sample to several adjacent color chips.**
- **Decide on best match.**
- **Double check color on adjacent hue pages.**

## **Seldom a perfect match**

- **Less than 5% of the time does your soil sample make a perfect match with the color chip. Most of the time you are reading between color chips and deciding on the best match. For this reason, do not spend a lot of time procrastinating.**

## **Reading soil colors is not an exacting science.**

**Under field conditions, measurements of color are reproducible by different individuals within 2.5 units in hue, and 1 unit of value and chroma**